DOCUMENT RESUME

ED 282 988 CE 047 408

| | |
|---|---|
| TITLE | Promotion of Cooperation amongst Research and Development Organizations in the Field of Vocational Training. Working Meeting Papers (Berlin, West Germany, September 11-12, 1986). First Edition. CEDEFOP Document. |
| INSTITUTION | European Centre for the Development of Vocational Training, Berlin (West Germany). |
| REPORT NO | ISBN-92-825-7000-2 |
| PUB DATE | 87 |
| NOTE | 154p. |
| AVAILABLE FROM | European Community Information Service, 2100 M Street, NW, Suite 707, Washington, DC 20037 ($5.00). |
| PUB TYPE | Collected Works - Conference Proceedings (021) -- Reports - Descriptive (141) |
| EDRS PRICE | MF01/PC07 Plus Postage. |
| DESCRIPTORS | Developed Nations; Educational Development; Educational Research; *Foreign Countries; Job Skills; Job Training; *Labor Force Development; *National Organizations; Needs Assessment; *Research and Development; *Technological Advancement; *Vocational Education |
| IDENTIFIERS | Belgium; France; Greece; Ireland; Italy; Luxembourg; Netherlands; Spain; United Kingdom; West Germany |

ABSTRACT

Eleven working papers are provided from a meeting to enable national training research and development organizations to present their current and future research and development priorities and exchange information and experience on projects of mutual concern. They cover a wide range of subjects in 11 of the 12 European Community Member States, but all the programs include work on changing qualification profiles needed to work effectively with new technologies. The papers include: "Summary of Major Research and Development Projects--AnCo (the Industrial Training Authority)--Ireland"; "Training Research Projects--The Centre for Studies and Research on Qualifications--France"; "Government Sponsored Research and Development on Vocational Training and New Technology--United Kingdom"; "Work Results of the Federal Institute for Vocational Training--Federal Republic of Germany"; "Development of Research in the Field of Vocational Training--French- and German-Speaking Community, Onem, Belgium"; "Vocational Training by the National Manpower Service--Flemish Community, RVA, Belgium"; "Outline for Action in 1986--Institute for the Promotion of Workers' Vocational Training (ISFOL)--Italy"; "Summary Progress Report on the Training Research Programmes in Greece"; "Research Methods for the Investigation of Problems in the Linkage with the Labour Market in the Netherlands--University of Utrecht and PCBB"; "Vocational Training in Spain"; and "Development of Vocational Training in Small and Medium Craft Enterprises in the Grand Duchy of Luxembourg." (YLB)

ED282988

CEDEFOP Document

# Promotion of cooperation amongst research and development organizations in the field of vocational training

# Working meeting papers 11 and 12 September 1986

European Centre for the Development of Vocational Training

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Promotion of cooperation amongst research and development organizations in the field of vocational training

Working meeting papers — 11 and 12 September 1986

First edition, Berlin 1987

*Published by:*

CEDEFOP — European Centre for the Development of Vocational Training
Bundesallee 22, **D-1000 Berlin 15**
Tel. (030) 88 41 20, Telex 184 163 eucen d,
Telefax (030) 88412222

The Centre was established by Regulation (EEC) No 337/75 of the Council of the European Communities

This publication is also available in the following language:

FR ISBN 92-825-7001-0

Cataloguing data can be found at the end of this publication.

Luxembourg: Office for Official Publications of the European Communities, 1987

ISBN 92-825-7000-2

Catalogue number: HX-48-87-323-EN-C

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*Printed in Belgium*

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## INTRODUCTION

1. Following on the meeting of research organizations in the field of vocational training held at CEDEFOP on 20 and 21 May, 1985, the second meeting of national training research and development organizations took place at CEDEFOP on 11 and 12 September, 1986.

11 of the 12 Member States of the European Community were represented by research organizations which have a role to play in advising governments on vocational training and retraining policies and strategies.

Most of the organizations had submitted short summaries of their research activities and future plans which were distributed before the meeting, whilst other relevant documents were available at CEDEFOP. Over 30 researchers and observers attended the meetings which covered a very wide range of research and development activity and interests. As in 1985, the range of subjects which were being studied in the various Member States included:

- training of young people with a view to making the transition from school to employment easier
- training programmes for the older, long-term unemployed, training young people and adults to work with new technologies
- studies concerning the link between labour market and vocational training and qualification supply
- development of training curricula
- the assessment of training standards
- the use of new technologies in education and training with particular reference to open and distance learning systems.

### 2. The objectives of the meeting

The main objective of the meeting, as in 1985, was to enable the various organizations present to give short presentations on their current and future research and development priorities, and to exchange information and experience on projects of mutual concern.

In his introductory comments, Dr. E. Piehl, Director of CEDEFOP, said that this was one of the most important CEDEFOP meetings of the year and that it was not only an opportunity to exchange information, but to see what progress could be made in co-operation and possible exchange of research personnel between the various organizations. The meeting had, therefore, a very practical objective in support of Community policy with regard to vocational training research and development.

In this context, Dr. Piehl also welcomed Mr. Mawson, representing Directorate-General V of the Commission of the European Communities. Dr. Piehl drew attention to the Commission's Work Programme on new information technologies and vocational training and said that some of the results of the work to date would be presented on the second day of the meeting. He also underlined the role that CEDEFOP was now playing within Section C of the Commission's Work Programme on new technology with regard to the planning and management of the study visits programme.

The CEDEFOP Work Programme for 1986 was introduced by Dr. C. Politi, Deputy Director of CEDEFOP. who emphasized that developments in the new technologies were taken into consideration across a wide range of CEDEFOP projects. Reference was also made to the technical assistance provided by CEDEFOP to the Commission's Work Programme on new information technologies and vocational training and to the support given in preparation for the major European conference on new information technologies and vocational training which will be held in London in November 1986, under the title of "People and Technology - investing in training for Europe's future".

Mention was also made of two major projects which will feature in CEDEFOP's Work Programme, dealing with the role of the social partners in vocational training and the equivalence of qualifications in the European Community.

## 3. Some current research work at national level

As is to be expected, the research and development programmes cover a very wide range of subjects in all Member States, but all the programmes include, as a matter of priority, work on changing qualification profiles needed to work effectively with new technologies. The common themes are basically the same as the list agreed at the 1985 CEDEFOP research meeting, but with some change of emphasis. The common themes continuing from the previous year are as follows:

- training of young people for transition from school to employment
- evaluation of training programmes
- the training of trainers
- adult training and re-training
- the development of training media and the use of the new technologies in vocational training
- the evaluation of pedagogical techniques
- studies on the link between the labour market and vocational training supply.

There is increasing emphasis on the utilization of the new technologies in the training and re-training situation with particular reference to open and distance learning projects.

Another trend not covered at the 1985 meeting concerned projects on the management of change in companies which is now receiving increasing attention in some of the Member States.

There was some emphasis on the need to improve the training supply for the older, long-term unemployed who, in many cases, would have improved chances of finding employment after a comparatively short period of re-training. In some instances, training organizations are increasingly seeing the neglect of this group as a waste of talent and previous experience.

Another item which was not covered at the 1985 meeting concerned an increasing concentration on the training of people for self-employment, which is seen as one way of combatting the present, high unemployment levels. Although many of the courses under this heading are of fairly short duration, there are now a number of projects designed to monitor the progress of first-time entrepreneurs who have attended the courses provided for them. This work is sometimes carried out in co-oepration with Development Agencies.

Training for the new technologies continues to be a subject of the utmost importance in the organizations represented at the meeting. The pervasive nature of the new technologies in manufacturing and in other areas of activities causes continued major reviews of training curricula and qualification requirements.

Developments in artificial intelligence and the use of inter-active video in training are now attracting greater interest in some of the Member States, and this would appear to be an area for potential co-operation, given the high initial cost of such systems.

## 4. Future research and development priorities

Future research and development priorities will, in general, follow the lines of the items listed at the beginning of this report with some emphasis on the forecasting of skill shortages by regions, and sectors.

Computer-based training systems will continue to receive considerable attention as will the trend towards the increased role of the regions in vocational training policy and development.

There will be continuing work on the subject of how much companies invest on their training efforts and on the role of the social partners in the determination of vocational training supply.

Company activities in the field of continuing training will also be examined in some of the Member States, as this is seen as a somewhat neglected field in comparison with the investment in the training of young people for a first employment.

In several countries, work continues on the impact of new technology on work organization and the qualification changes associated with this subject. Some work is also designed to help individuals to adapt to change, and there is a particular emphasis in some countries on the subject of training management to deal with technological change, taking into account the importance of the human factor.

## 5. Notes on the discussions

With participants from 11 of the 12 Member States, including representatives from Spain and Portugal attending for the first time, there was a lively exchange of information on the various national presentations that were made. The range of subjects being worked on by the various national research and development organizations in vocational training reflected almost every item in the Commission's Work Programme on new information technologies and vocational training and the Work Programme of CEDEFOP.

The participants were anxious to progress from a simple exchange of information to more concrete results and to a closer co-operation on projects of mutual interest. Interest was particularly high in the possibilities of co-operating on projects designed to examine the role of companies in the provision of vocational training and continuing training and it was announced that the Federal Institute for Vocational Training, Germany, the Centre for Research on Qualifications (CEREQ[+]) and the Institute for the Development of Vocational Training of Employees (ISFOL)[+] had agreed to co-operate on specific projects in this field of study. The three organizations concerned, as well as ONEM from Belgium, requested CEDEFOP to be present at these future discussions on objectives, methods and evaluation techniques and to provide enough time on the agenda of the Forum of next year for these specific projects.

[+] CEREQ - France; ISFOL - Italy

It was also announced that the Federal Institute for Vcoational Training and the Centre for Research on Qualifications had agreed to exchange research personnel for specific projects. The exchange personnel would be required to work on a specific project and produce a report at the end of the period of attachment.

The Federal Institute also announced that they would exchange annual Work Programmes in advance with the National Employment Office (ONEM), Belgium, with a view to possible co-operation on projects of mutual interest.

These initiatives were welcomed by the participants and it was made clear by the various organizations already mentioned that these arrangements were not exclusive and that they would welcome such co-operation with other research and development organizations in the Member States.

6. Presentation on the concerted research projects of the Commission of the European Communities on new information technologies and vocational training[1)]

There was a short presentation of the four section B concerted research projects under this programme by representatives from the Fraunhofer Institut, Germany, the Council for Educational Technology, United Kingdom, ISFOL, Italy and ADEP, France. The four subject areas covered are as follows:

- new occupations and sectors of activity
- open and distance learning systems
- regional and local management of human resources
- vocational training in small and medium enterprises.

Fuller details of these reports are available in CEDEFOP Flash No. 4/86.

7. Conclusions

The participants welcomed this further opportunity for the exchange of information and ideas on current and future research priorities. They, however, expressed approval for CEDEFOP's proposal to concentrate on questions of methodology and assessment techniques and to have more detailed presentations on selected themes at future meetings.

It is confirmed that co-operation between CEDEFOP and most of the institutes present involved in specific projects will continue for the next year too, i.e. particularly on the subjects:

1) See Commission's Work Programme on vocational training and new information technologies 1985 - 1988

- Role of the social partners in the vocational training systems of the EC Communities
- Vocational training in enterprises, especially the SMEs
- Training of trainers.

It was also agreed that some of the time should be devoted to more forward-oriented projects and ideas and the following format for future meetings was agreed:

- 10-page summaries of current and future activities would be submitted to CEDEFOP earlier in the year than previously and that these would be translated and distributed well in advance of the next meeting
- that the first day of the next Forum in September 1987 would be devoted to receiving up-dates on the reports already submitted and distributed with following discussion
- that the second day would be devoted to a more detailed presentation of two or perhaps three specific subjects.

Representatives from the United Kingdom reported that the first five-year period of the Open Tech (OT) would have come to an end and that an evaluation which was being carried out would provide interesting results for such a presentation at the 1987 meeting. It was agreed that this would be a suitable subject for consideration, but that other subjects might be proposed by CEDEFOP and the participants themselves.

The evaluation of the results of the first five years of the Open Tech in the United Kingdom might also lead into a short presentation on the new United Kingdom initiative relating to the Open College of the Air. Such a presentation would also give an opportunity to hear the latest information on developments in computer-based training which might have a significant impact on training techniques in the future.

Finally, it was agreed by all present that the 10-page national report summaries and the presentation at the meetings should concentrate principally on training research topics since the main interest lay in questions of research objectives, methodologies and evaluation techniques.

There was, in general, a very strong interest in developing closer co-operation and in the possibility of the exchange of research personnel not for one or two weeks, but for anything from three to six months. This obviously presents some financial difficulties which would have to be overcome.

It was agreed that CEDEFOP was the appropriate platform for meetings of the training research organizations.

NB: Contributions from Luxembourg and Spain are being translated and will be incorporated in the final report.

W.G. McDerment
Project Co-ordinator

# PROMOTION OF CO-OPERATION AMONGST RESEARCH AND DEVELOPMENT ORGANISATIONS IN THE FIELD OF VOCATIONAL TRAINING

WORKING MEETING
11-12 SEPT 1986

## SUMMARY OF MAJOR RESEARCH AND DEVELOPMENT PROJECTS

AnCO - THE INDUSTRIAL TRAINING AUTHORITY
DUBLIN

CEDEFOP
BERLIN
1986

# Promotion of Co-operation Amongst Research and Development Organisations in the Field of Vocational Training

Submission
by
AnCO - The Industrial Training Authority
Ireland

## SUMMARY OF MAJOR R & D PROJECTS

1985 - 1987

Angela Lambkin
Research and Planning
AnCO
June 1986

INTRODUCTION

AnCO the Industrial Training Authority aims to promote and provide training to help achieve national objectives and by doing so to assist individuals to secure satisfactory employment and businesses to be more successful.

The Planning, Research and Development Division of AnCO is a key area which aims to identify the current and future manpower needs of industry and to devise plans to meet those needs as well as researching and developing training technology in relation to Irish Industry.

This Division is divided into two main areas:- (1) Development and Standards, and (2) Research and Planning, having main responsibility for:-

(1) Development and Standards

a. - testing and certification
b. - quality assurance
c. - programme design
d. - research into flexible learning systems

(2) Research and Planning

a. - preparing detailed sectoral and regional manpower reports
b. - disseminating technical information both within AnCO and in response to external requests
c. - programme monitoring and evaluation
d. - pedagogic research
e. - attitude and market research.

The main projects and their current status which the Planning, Research and Development Division is engaged in are outlined briefly below.

DEVELOPMENT AND STANDARDS:

1. Skills Foundation Programme

The Skills Foundation Programme is AnCO's main contribution to the Social Guarantee. It has been designed to meet the training needs of early school leavers who are experiencing difficulty entering the adult world of work.

It is a seven month training course divided into five months off-the-job training and two months of planned practical work training. It is a trainee centred programme using the medium of experiential learning to assist the young person to take responsibility for his/her own career.

AnCO has designed a package of guidelines for trainers conducting this programme. This Skills Foundation package includes workbooks for the participants and specific guidelines for training in personal effectiveness, computer literacy and occupational specific training. The package was formally launched in 1985. In 1986, 246,000 training days (spread over approximately 28 five-day weeks) covered about 1,800 training places allocated for this programme. This will increase to 300,000 training days in 1991, involving some 2,150 training places. There is a high level of demand from young people for this course.

2. Building on Experience

Building on Experience is a training programme for the older long-term unemployed. This training programme is AnCO's response to the Governments' call in the National Plan "Building on Reality" for a training initiative on behalf of the older long-term unemployed. Guidelines were designed for trainers in late 1984 by Development and Standards section and more detailed guidelines are soon to be provided similar to that of the Skills Foundation Programme.

The training programme is 24 - 26 weeks in duration. The overall aim of "Building on Experience" is to enable the trainees to set up and achieve realistic and worthwhile work goals for themselves and re-enter the world of employment. In 1986, 277,000 training days were allocated for this programme. This will be reduced to 150,000 training days in 1981. To date these training courses have been highly successful with approximately 746 persons participating in 1985.

3. Youth Traineeship Initiative

This initiative is part of the AnCO's Strategic Plan. This particular initiative is aimed at the young employed person with a low standard of education who is not recieving any formal training at work. This programme currently at the planning stage with the Development and Standards section will be introduced on a pilot basis by AnCO's Training Advisory Service. The structure is planned as follows:-

a) a formal training agreement between a young person and an employer, to provide for further training/education over one (or two) years.

b) the achievement of the stated objectives through some form of alternance training:- employment release scheme.

c) the opening up of a facility to allow trainees to aspire to (higher) qualifications through a system of accumulation of units of credit, based on work experience and completed education modules.

## 4. Testing and Certification: Profiling

Profiling is a system for recording a trainees performance over a selected range of abilities. The abilities selected for the pilot programme reflect the objectives of the Skills Foundation Programme.

Profiling is ideally suited for recording progress on aspects of the Skills Foundation Programme which cannot be measured by traditional testing methods e.g. Initiative, Responsibility etc. This system therefore gives a rounded picture of an individual.

The proposed system is trainee-centred. Profiles are carried out jointly by Trainer and Trainee.

### Present Position

A Working Group representative of Training Centres Division, External Training Division and Training Development and Standards was formed in October 1985 to recommend on a system of Profiling for the Skills Foundation Programme.

A Draft Profiling System, was launched on the 4th February 1986. This Pilot programme is running in four training centres and three External Training locations. An initial survey carried out in early April indicated a high level of acceptance by Trainers and Trainees.

National implementation of Profiling for the Skills Foundation Programme is scheduled for July 1986.

## 5. Quality Assurance

Inspired by a concern for and committment to the quality of the training it provides, AnCO allocated resources to a new Quality Assurance Unit in 1985.

The key areas of activity for this unit are the research, provision, promotion and audit of quality standards for training provided by AnCO. It is well recognised that a high degree of quality aready exists in the work of the organisation and the function of the quality assurance unit is to harness this and to extend it into areas where it is not so evident. The overall aim is to raise the level of quality consciousness throughout the organisation.

Current activities of the Quality Assurance Unit are divided into three areas:-

1) AnCO Training Standards

Activity in this area involves the development of a Mandatory Training Programme specification and the production of good training practice guidelines. This work ensures the maintenance of appropriate standards for all training courses.

2) Standards of Certification

Preparation of standards and guidelines for AnCO staff are currently in progress on Programme Objectives, Assessment systems and testing methods. A pilot research programme comparing training standards of, British, West German and Irish, Mechanical Fitters and Electricians is underway.

3) Quality Assurance

An investigation into the factors affecting quality of training is taking place. Following completion of this study in July 1986 the design and implementation of a Quality Awareness campaign will be undertaken. The development of the prototype of a staff workshop has begun already.

## 6. Flexbile Learning Systems

The Flexible Learning Systems Section is responsible for the co-ordinated development, production, packaging, delivery, installation and maintenance of IVIS, CBT, Open Learning and Distance Training programmes.

The main aim of the Flexible Learning Systems Section is to design, develop and produce to the highest quality standards packages in the area of flexible learning systems.

The main function of the section are:-

- design and development of packages.
- pilot new initiatives in the area of flexible learning systems.
- support and counsultancy services.

Current activies include:-

1) Interactive Videodisc Projects:- Welding disc, IAM Discs - series of ten discs on Computer Literacy, and New Electronic Technologies, and developing learning skills on new interactive videodisc project.

2) CBT Courseware Projects:- CBT courses and demonstration discs on Robotics, Hydraulics, Costing and Finance, and a new series of CBT course on Reading the Metric Micrometer, Letter/Report Writing and Resistive/Capacitive Colour Codes.

## RESEARCH AND PLANNING

### 1. Workinout Evaluation

Workinout was a programme aimed at helping young people assess their strengths and weaknesses, develop a broad concept of work, explore self-employment and select realistic life goals. The programme was an innovation for AnCO in that not only was it part-time but also used a more trainee-based learning approach. The evaluation covered the first ten weeks of the Workinout Programme which dealt with personal effectiveness and career decision making, as well as a placement monitoring survey.

The trainee profile revealed that two-thirds of the trainees recruited were under twenty years of age, and 60% were of Intermediate Certificate standard or lower, even though Workinout had originally been designed for a more educated trainee profile.

Ninety-five percent of the trainees rated Workinout positively. The major reasons given were that it had increased their self confidence, developed their job seeking skills and helped their career decision making.

As a result of the programme the trainees improved significantly in self-esteem, belief in their ability to control their future, career choice attitudes and became more problem focussed in coping with their unemployment. Half of the trainees had worked in the three months since completing the programme and many others were involved in further training and educational courses.

## 2. Contribution of Training to Enterprise Development

AnCO's overall strategy in this area is to develop its programmes to encourage, identify and to train would-be entrepreneurs. AnCO believes it has a major strength in delivery of enterprise training.

a) AnCO is currently providing a range of Enterprise Training Programmes. These include Start Your Own Business, Youth Enterprise, Market Development and Product Development Programmes.

The overall objective of the research is to identify:-

1. ways in which training contributes to the development of new enterprises and
2. to identify the major areas where training is required and of benefit to successfully starting a business.

The study, presently at the design stage, will attempt to show that AnCO enterprise development courses provide benefits to participants which give them a better chance of success than simply recieving grants. The fieldwork research will be undertaken later in the year. It will involve:-

1. interviewing candidates who have previously participated in enterprise programmes,
2. a pre- and post-course validation study of a group of participants on a current programme and
3. analysis and review of previous research and literature on Entrepreneurial training, together with interviews and discussions with trainers on enterprise programmes.

b) West Cork Enterprise and Development Programme

A training based project aimed at economic development within the West Cork Community is to commence in June 1986 for 18 months. This project is in response to a proposal from the West Cork Education Institute for Rural Development to the E.S.F. (European Social Fund). AnCO will have responsibility for the administration and training on this project. The model for the project will have four main elements:-

| | | |
|---|---|---|
| Enterprise Training | - | Start Your Own Business, Product Development, Export Marketing. |
| Selection Criteria | - | Strict selection criteria for potential projects, participants and companies. |
| Community Based | - | Programme steered by a Management Team which includes representatives from W.C.E.I.R.D. and AnCO. |
| Locally Based | - | Programme actively promoted in the area along with the development of a West Cork Business Development Centre in Skibbereen. |

The Training Research Section of the Research and Planning Division will conduct an evaluation to examine the success of this programme as a training model and to identify its potential for future AnCO programmes. The evaluation will look at the operation of each of the four main elements and how they are intertwined. It will also include a 'follow up survey' to gather information on the number of businesses set up, the number of job created, the levels of export of products/services and the uses being made of the Business Development Centre.

## 3. An Evaluation of Community Training Workshops

This study was commissioned by AnCO and the Youth Employment Agency in early 1985.

Community training workshops were originally set up in the mid 1970's to cater for the needs of disadvantaged young people. The C.T.W.s aim to provide training to these young people to enable them to compete more favourably with other young people for employment and further training.

The study will provide a comprehensive review of the effectiveness and efficiency of Community Training Workshops. It will examine the overall success of the programme, the organisation/management structure and the training methods used.

The fieldwork for this study took place during the months of June through to August 1985. The final report is presently in preparation. The findings of this study will provide a strong basis on which recommendations for future training in Community Training Workshops can be made.

## 4. Computer Related Office Employment Study

This study will provide AnCO with an assessment of the present and future impact of computer-related technology on office occupations in Ireland. On the basis of the findings of this study recommendations will be made in regard to AnCO training in this area.

The study will examine the status of office automation systems implemenation within Ireland, the current and forecast use of office automation systems in other countries, and the current state of the art and technology trends in the office automation area.

The study will provide information in regard to the position of the white collar worker in Ireland in relation to the available technology and to his/her counterparts abroad. Details concerning the likely job and skills profile for the future office worker will be gathered based on an assessment of the current position and the impact of projected technological advances. It will also tell what the expected recruitment criteria will be in the office sector as technological advances are implemented.

The fieldwork for this study has taken place and a report of the findings will be written by July 1986.

5. Mechanical Engineering Sectoral Study

The Mechanical/Electrical Engineering sector is a sub-sector of the Engineering Designation of AnCO.

This sectoral study will analyse developments at an international level over the next decade and spell out the implications for AnCO. The study will have a particular emphasis on future manpower and training needs.

The study will be aimed at all the subsectors of the engineering designation excluding the Electronic and Motor Industry subsectors. These sectors cover a wide range of products and processes, some new and technologically advanced, other traditional involving primary processing only.

The study will examine the various subsectors of the industry and will also analyse developments in terms of the following types of operations:-

1) the large branch plant
2) the small machine or jobbing shop.

This research report is nearing completion.

## 6. Chemicals Sectoral Study

Similar to the study of the Mechanical Engineering sector this study will forecast the future manpower and training needs of the chemical industry over the next five years. The information gathered will be used to advise the chemicals sector on the appropriate allocation of the available training funds in accordance with future trends.

A draft paper on this study will be available in September 1986 with a final report at the end of the year.

## 7. Distribution, Transport and Services Sectoral Study

The 'services' sector of the Irish economy currently employs 55% of the non-agricultural workforce in Ireland. In recent times, policy makers have begun to place their hopes for future employment growth in this sector. The recently published National Plan - Building on Reality forecasts a growth in employment in the services sector. The Strategic Plan of AnCO refers to the need to strengthen AnCO's involvement in the service/distribution sector.

The study represents an initial attempt by AnCO's research department to collect background information on the nature and future direction of the services sector to be used by AnCO when deciding future training interventions required for the sector.

The study will draw together and assess existing statistical information and recommend means by which such information, both from government and other private sources, can be regularly monitered thus providing indicators for updating AnCO's training interventions.

It will examine patterns of growth in the sector and its subsectors both in Ireland and selected European countries with a view to highlighting both key occupational groups and key growth areas in the service sector where training/ re-training will be most urgently needed.

This study commenced in mid 1985 and the information gathered will shortly be available in report form.

# NATIONAL TRAINING RESEARCH AND DEVELOPMENT ORGANIZATIONS

WORKING MEETING
11-12 SEPTEMBER 1986

## THE CENTRE FOR STUDIES AND RESEARCH ON QUALIFICATIONS

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1986

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CENTRE D'ETUDES ET DE RECHERCHES SUR LES QUALIFICATIONS
9 rue Sextius Michel, 75015 Paris

For CEREQ, 1985-86 was a year in which a twofold trend already evident in previous years became even more marked. One aspect of that trend has been a growing effort to meet the needs of outside partners, both those responsible for decisions on training and employment such as the Ministry of Education, the Délégation à l'Emploi (Delegation for Employment) and the Délégation à la Formation Professionnelle (Delegation for Vocational Training), and partners with the same research concerns such as the Commissariat au Plan (Commissariat for the National Plan), the mobilization programme on "technology, employment and work" and PIRTTEM.* The second aspect has been the broadening of CEREQ's own specialist field of research: the common ground between training and education on the one hand and recruitment and employment on the other. It is because its work lies in this field that CEREQ differs from other research agencies set up by the Ministry of Education and the Ministry of Employment. The ways in which it is extending its investigation are by refining the methods of observation used by the "Observatory on entry into working life" and under its "Programme of observations on employment and labour within firms" ("POETE"), and by carrying out fresh research on the changing patterns of skills and its definition of occupations.

This twofold goal has been relatively difficult to attain. Employment and training are issues of growing concern to many economic and social forces, including employers, professional associations, trade unions, educators and trainers, students, pupils and parents, counsellors, etc. As a result there have been many requests for research, action and documentation, but these have on occasions overlapped and been frag-

* Programme interministériel de recherches sur le travail, l'emploi et les modes de vie

mented. There is a risk of a dispersion of effort unless CEREQ makes an effort to organize the dissemination and use of its research work more effectively.

CEREQ has had to walk a tightrope between acting as a provider of services and conducting disjointed research on the problems of current concern to decision-makers. In responding to the needs of its partners, CEREQ has tried to gear its methods and the whole of its research work to three main demands: for the formulation of initial training policies; for evaluation of training policies in terms of how effectively they help young people to enter the working world, and for an evaluation of employers' policies on continuing vocational training.

1) Formulation of policies for initial training: CEREQ is already active in CPCs and the CIC, but the Ministry of Education has also asked the Centre to produce dossiers for the "technological and vocational teaching subjects group" on occupational fields chosen jointly by the Directorate of Lycées, the Inspectorate General and CEREQ. In 1985, two dossiers were produced, one on jobs in electricity and electronics and the other on careers in sales. In 1986, CEREQ started work on a "production management" training dossier. The work being done by the technological subjects group provided CEREQ with an opportunity to:

- make good use of the methods and research that had for a long time been inherent in its activities, such as those applied by the Observatory and its Department on Job Qualifications;
- cross-reference the research findings of its three departments and its project leaders in each dossier, highlighting the extent to which different approaches complement each other. The dossier on careers in sales is exemplary in this respect, as acknowledged by all participants, including observers from other ministerial departments.

2) The evaluation of training policies and their effects on the integration of young people in the working world: CEREQ has conducted a large-scale, systematic survey on courses for the 16-18 age group. Several reports have been drawn up on the basis of those survey findings, at the request of the Delegation for Vocational Training (the latest report was submitted in April 1986). Over the past few months CEREQ has also:

a) presented two papers during seminars arranged by the Delegation for Employment on "labour market structures and employment policies" on 3/4 October 1985. These papers reported on observations on young people entering the working world, relating those findings to the structure of mobility on the labour market and to employment policy measures designed to help young people.

   The two papers did much to challenge the received idea that the educational system is primarily responsible for young people's growing difficulties in finding stable employment after their school education.

b) proposed that the Ministry responsible for Employment and Vocational Training create an instrument for observing young people as they pass through the various training and employment facilities set up by that ministerial department. The resulting observations would to an extent be based on observations of school-leavers in general. They would contribute towards a systematic follow-up and evaluation of individual measures over the medium term, focussing on the scholastic and social attainments of target groups and, where appropriate, showing how the various facilities through which young people pass could be interlinked.

3) Evaluation of employers' policies on continuing training. CEREQ has drawn on three sources in its evaluations:

a) employers' own statements, from which CEREQ has formulated statistics. It has then analysed the training facilities on the market, shedding light on the respective roles of each category of body that provides training or taps the 1% payroll tax levied to finance training;

b) within Commissariat for the Plan group 4 (on industrial strategy), CEREQ has conducted a small-scale survey on some ten small firms to find out about their attitudes to training. Also for the Commissariat for the Plan, CEREQ is now coming to an end of research on the links between spending on in-company or in-sector training and the result achieved.

c) Finally, under the "POETE" programme, CEREQ has taken continuing vocational training as the subject of horizontal research, based on the monographs it has produced on individual firms.

All this research leaves many more questions unanswered than those to which it gives clear replies as regards the role of vocational training in employers' strategies. Nevertheless, it systematically highlights the question underlying all studies on how training relates to employment, i.e. the respective roles of initial and subsequent training in vocational training. The thread running through all the research is professionalism or the acquisition of skills.

To treat these three main themes of public policy, the investigation of CEREQ must address itself to a number of related areas, using diversified materials and methodologies. Put simply, one can regroup the work under three main headings:

- the analysis of work and professions
- the study of enterprises and sectors of activity
- the integration and employment of young people.

The Annex shows a list of some major CEREQ projects, fuller details of which may be obtained from CEREQ.

ANNEXES

1. Work and Occupation

1. Training in commercial affairs, sales, distribution, and developments in the "sector"-

13. Development of employment and occupations in trade sectors.

17. Development of qualifications in the glass industry.

35. Dossier on jobs in information technology.

40. Definition of training for new technologies.

41. Medical care systems and health policy: the creation of occupational groups and training policies.

42. Definitions of a social category: the technician.

II. Enterprises and sectors

7. Data bases in the "Programme for the observation of employment and work in enterprises".

8. Programme for the observation of employment and work in enterprises.

10. International comparative study on the development of qualifications in the service sector.

11. Employment and management of workers in the public works sector: sectoral and national characteristics in Italy, Federal Republic of Germany and United Kingdom.

15. Continuing training policies and economic characteristics of the sectors and industrial enterprises: industrial application.

16. Continuing training and SMEs.

19. Treatment of the annual statements of employers concerning continuing vocational training (budget item 2483), years 1984-1985.

III Integration and employment of young people

3. Professional situation of university graduates in law, economic sciences, management and economic and social administration.

22. Training/employment situation (balance sheet).

27. Career development of former apprentices.

46. The workings of the labour market for those with higher university degrees.

47. Career development of young people who, in the years 1982-1983 underwent training under the programme for the integration of the 16-18-year-olds.

48. Employment of young people and policies to combat unemployment. Situation in France between 1975 and 1985.

49. Mobility of the active work force and integration of young people.

PROMOTION OF COOPERATION AMONGST
RESEARCH AND DEVELOPMENT ORGANIZATIONS
IN THE FIELD OF VOCATIONAL TRAINING

WORKING MEETING
11-12 SEPTEMBER 1986

# GOVERNMENT SPONSORED RESEARCH AND DEVELOPMENT INTO VOCATIONAL TRAINING AND NEW TECHNOLOGY IN THE UK

MANPOWER SERVICES COMMISSION
SHEFFIELD

CEDEFOP
BERLIN
1986

GOVERNMENT SPONSORED RESEARCH AND DEVELOPMENT INTO VOCATIONAL TRAINING AND NEW TECHNOLOGY IN THE UK

INTRODUCTION

1. The Manpower Services Commission's work[1] on vocational education and training continues to be directed primarily towards the implementation and development of the New Training Initiative (NTI) whose objectives are:

(i) promoting the development of skill training,

(ii) movement towards a position where all young people under 18 are offered either full-time education or planned work experience combining work-related training and education, and

(iii) opening up opportunities for adults to acquire, increase and update skills and knowledge throughout their working lives.

2. Prime responsibility for Government sponsored research and development into vocational training remains with the Training Division of Manpower Services Commission (MSC). The main emphasis is on ways to improve the delivery of NTI objectives and programme evaluation as well as outputs which have a more immediate application to the quality and content of its programmes.

3. Research into employment and training is also funded by other Government departments. The Department of Employment itself supports a number of studies which provide a major contribution to understanding the implications of the wider labour market role of Government for training. The Department of Education and Science (DES) undertakes some research of its own; and provides the Further Education Unit (FEU) with an income - vocational preparation underlining much of the FEU's work.

4. Work in the field is also supported by the two publicly funded independent bodies - the National Economic Development Office (NEDO)[2] and the Economic Social Research Council (ESRC)[3].

MAIN RESEARCH AND DEVELOPMENT THEMES IN NEW TECHNOLOGY

5. NTI objectives underpin MSC TD's research and development projects.

More specifically, the work provides insights into such fundamental questions as programme evaluation, programme development (including learning processes) and the nature and extent of changing skill requirements associated with the adoption and use of new technology. A list of current and completed projects relevant here is attached (see Appendix I).

6. In April 1986 the Working Group set up by the Government to review the system of vocational qualifications in England and Wales presented its final report recommending changes which are needed to secure improvements to the existing system. The Commission recognises the impact which this review could have on the implementation of NTI; and the large programme of work which could flow from it.

7. The main themes running through the current work to meet the challenge of technological and occupational change are:

(i) to provide better labour market information on future skill demands and training requirements that arise with the adoption of new technology and structural change at the national and local level;

(ii) to help organisations manage changes in production and development;

(iii) to help individuals to acquire the knowledge and skills required to cope with new or unfamiliar demands.

IMPROVING LABOUR MARKET AND TRAINING INFORMATION

8. Work is proceeding on how to improve the collection and dissemination of national and local labour market information.

9. As far as improving <u>local</u> labour market information and making it more accessible is concerned, the aim is to increase the relevance to employers' needs of training financed or provided by the Commission. Work is being undertaken which will pull together projects designed to improve access to information for employers and individuals such as Jobcentres' 'gateway'[4] facilities and computerised networks of information and guidance developed

by the education sector. In addition the Commission will draw on information provided by Industry Training Organisations on skill requirements and on the analysis of employers' training needs provided through CALLMI[5] and the Local Collaborative Projects[6] which the Commission and Education Departments have jointly set up.

10. Ways of improving information on skill supply and demand at the national level are also being pursued to improve the level of understanding on both qualitative and quantitative aspects of emerging skill requirements. Major work here has been general scans of the field to assess the supply and demand for skills in the economy as well as the relevance of training provision to British industry and the changes needed to avoid the recurring problem of skill shortages. Some work is also planned to identify the major implications for skill and training requirements associated with the introduction of new materials (such as high performance ceramics). The Commission is currently inviting comments on a Consultative Document which examines options for establishing a central focus for information on skills supply and demand.

MANAGEMENT OF CHANGE BY ORGANISATIONS

11. Much work has been done in recent years showing that Britain's performance on training is poor in comparison with our main international competitors. Drawing on comparative data from West Germany, the USA and Japan, the Institute of Manpower Studies' report 'Competence and Competition' (1984) demonstrates how much more needs to be done to facilitate progressive policies and practices towards training if British industry is to compete effectively in world markets.

12. Other studies commissioned by MSC reinforce this message. In particular the study carried out by Coopers & Lybrand into what motivates employers to invest in training (see their report 'A Challenge to Complacency'); and the major survey which IFF Research Ltd have undertaken at the Commission's request showing the relationship between training and high business performance[7].

13. The Commission is pursuing general policy developments which it is hoped will influence employers and training providers to improve the quality and quantity of UK training in the future. Much of the research and development work which MSC supports has this central focus. The key elements

of the programme are:

(i) Strategic change and human resource management

A 3-year research project is being mounted by Warwick University for MSC to investigate the extent to which companies' decisions about human resource policies are related to overall business strategy, particularly in an environment of change. The research will seek to describe the conditions which help companies in different sectors to develop the potential of all human resources.

(ii) Management training and development

The Commission is supporting 80 company-based demonstration projects, mainly focussed on solving a problem and learning from the process. The aim is to improve existing provision and techniques, with a particular focus on approaches needed for successful management of change, of investment and innovation, of better economic performance and of communication in situations of change.

(iii) Access to information technology (AIT)

This is a scheme which MSC has developed to stimulate provision and use of IT training facilities outside normal hours, increasing opportunities for individuals to undertake such training; and increase the general level of awareness and basic knowledge of information technology. First follow-up results show that the scheme is helping those who most lack confidence in their ability to cope with new technology (such as women and people over 45).

(iv) Training of trainers

Major work here includes the development of the Commission's Accredited Centre network and a number of development programmes designed to improve the quality of trainer training available in both private and public sectors. In particular the Commission is funding development work into the roles and competencies required of those involved in training; and the changing role of training departments within companies experiencing operational and structural change.

(v) Using new technology to deliver training

MSC is supporting a number of exemplary projects which are designed to demonstrate the efficiency and effectiveness of new technology, including developments such as Interactive Video and Artificial Intelligence, in helping people learn. In particular, the Commission is funding a number of computer based training packages aimed at meeting the training needs of people starting up and running small businesses. The results of these exemplary projects will be disseminated so that they may be adapted and replicated as widely as possible.

(vi) Open Tech Programme[8]

MSC's Open Tech programme is aimed primarily at the provision of open learning materials for jobs broadly at 'technician' level. The aim is to widen access to training and encourage the adoption of more flexible and cost-effective training arrangements geared to the needs of individuals and employers. Some of the materials developed are aimed specifically at helping training managers to cope with organisational change and encouraging senior managers to use training to run their businesses more effectively.

(vii) Improving standards of competence/good practice

The Commission continues to be concerned with improving the effectiveness of training arrangements, particularly where new machinery and equipment is being installed. A number of pump-priming projects are being supported to encourage the development of competence-based standards and associated assessment systems. Some of these projects are being used specifically to help develop strategies which can be used within companies to provide training for the management and utilisation of new machinery and equipment.

STRATEGIES TO HELP THE INDIVIDUAL TO LEARN

14. The Commission is also concerned to develop ways to help people learn more efficiently and build on existing skills so they can adapt to the new demands arising from changes taking place in industry and commerce. The programme of work here falls broadly into two categories:

(i) Work designed to increase the individual's capacity to apply

skills in a range of situations (broadly referred to as 'transfer of skills' projects).

(ii) Work designed to increase the individual's capacity to learn new things (broadly referred to as 'learning to learn' projects).

15. Work supported by MSC has largely tackled transfer through two approaches. The first approach is analytical and descriptive - and depends on identifying or specifying what are transferable skills. Major work undertaken here has so far been confined to the Youth Training Scheme (YTS)[9]. Firstly, the Core Skills Project from which a framework has been generated which enables jobs or tasks to be analysed so that the opportunities to learn transferable skills can be identified. MSC is presently considering ways in which the framework might be adapted for use in adult training. Secondly, the Skills Ownership Project - the aim of which is to help individuals to develop strategies that are transferable within groups of occupations called Occupational Training Families (OTFs).

16. The second approach to transfer is trying to understand how people learn and apply their skills so that the most appropriate learning or training methods can be selected to facilitate it. The main MSC work being undertaken here is a project which the Institute of Education has mounted concerned with looking at effective methods of promoting transfer in problem solving and mathematics tasks within YTS.

17. As regards research on learning to learn, one approach has been to develop training materials which will enable the individual to acquire a wider repertoire of learning skills. Ways are currently being sought by the Institute of Science and Technology at the University of Wales (UWIST) to apply the principles learnt from research with young people to adult training and re-training. The other approach which has been implemented almost wholly within management and supervisory training consists of trying to help people identify their own particular learning styles and maximise their use. Roffey Park Management College which has done most of the work developing this approach suggests a range of applications (including management development, team building and organisation development).

FUTURE DEVELOPMENTS

18. In line with the New Training Initiative and its policies for Adult

Training, the Commission has accepted important new responsibilities in the field of improving information about, and encouraging wider access to, vocational education and training (VET) provision.

19. In March 1986 the Commission approved a major long term project designed to improve access to data bases on VET through the development of computerised training access points (TAPs) set up in a variety of locations including Jobcentres, public libraries, high street shops and training institutions. Pilot studies so far run have indicated the potential for TAP information and advisory networks and the need for further feasibility work.

20. Another initiative recently announced by the Secretary of State for Employment are the Commission's proposals to set up a College of the Air. The College will provide courses below degree level which will help people improve their vocational competence - using a combination of broadcasting on radio and television with back-up services provided by local education or training institutions.

NOTES AND REFERENCES

1 The Manpower Services Commission was set up on 1 January 1974, under the Employment and Training Act 1973, to run the public employment and training services in the UK. The Commission is not a Government department but is accountable to the Secretary of State for Employment.

2 NEDO provides administrative support for national and sector level working parties at which Government, employer, trade union and other key interests regularly discuss ways of improving economic and industrial performance. It also has an innovatory function which is assisted by a small research budget.

3 ESRC was established by Royal Charter and receives funds from the DES vote for the promotion of social science research. It provides research grants to academic and research institutions including individual students.

4 The Commission through its Jobcentre network provides an employment service which is primarily concerned to help employers fill vacancies and place jobseekers in work. Jobcentres now also play an important role as a 'gateway' to the services which the Commission and others can provide. During 1986 the Commission intends to ensure that Jobcentres obtain more up-to-date and accurate information about employment and training information, including the whole range of employment measures, as well as various forms of help for small firms and for those wishing to set up their own businesses. Pilot experiments are being undertaken to explore a variety of ways in which information technology can be used to enhance the quality and efficiency of the service they provide.

5 The CALLMI (Computer Assisted Local Labour Market Information) system is designed primarily to provide TD Area Offices with assistance in the storage, retrieval and interpretation of local labour market information. Information from the system is largely intended to be of use in providing support to TD Area Offices in a wide range of planning and operational decisions. In addition there are plans to feed the information into the Local Labour Market Information reports produced at area level for those outside MSC.

6 The Commission recognises the need to continue to encourage others to work more closely together, especially at local level . The Local Collaborative Projects are designed specifically to encourage employers and training providers to work better together at local level in identifying and meeting training needs.

7 The survey referred to here examined the volume of training undertaken and attitudes to training amongst management in 500 firms employing over 25 people in all types of private sector businesses throughout Britain (the report "Adult Training in Britain" presenting the main findings was published in June 1985). Further work is to be carried out by IFF Research Limited involving case studies in both British and foreign firms.

8 The Open Tech Programme was launched in Autumn 1982 with the aim of promoting the application of open learning methods to assist the education, training and retraining of adults at technician and supervisory levels. The present programme is scheduled to end on 31 March 1987 and an evaluation of the programme is currently being undertaken by the Tavistock Institute of Human Relations (whose full report will be available in the Summer of 1987).

9 The Commission is committed, through NTI Objective Two, to providing school-leavers with a bridge between school and work through improved vocational education and training opportunities. In response to this, the Commission's Youth Training Scheme (YTS) offers young people the opportunity to obtain high quality training and work experience (about 329,500 young people entering the scheme in 1984/85). In July 1985 the Commission's recommendations on the development and expansion of the one year scheme were broadly accepted. Since April 1986 YTS has become a two year scheme, with several new features designed to ensure that the emphasis on quality will be reinforced.

SOME RELEVANT RESEARCH AND DEVELOPMENT PROJECTS FUNDED BY MSC

| PROJECT TITLE AND OBJECTIVES | OUTPUTS & USES | CONTRACTOR | TIMING |
|---|---|---|---|
| CURRENT PROJECTS | | | |
| Evaluation of Career Development Programmes in Computer Ser. Industry. | To review progress of pilot sites to produce a framework for training education & career dev programmes for computer services industry. | Definitive source for computing industry & other companies with interest in information technology. | COSIT | 20-01-86<br>18-06-86 |
| Selection & Training of Computer Personnel. | Suggest how training & selection standards in computing occupations can be identified by employers. | Analytical instrument used by employers to develop work based criteria & training design. | Occupational Services Ltd | 01-06-84<br>31-10-86 |
| Training of Trainer/ Assessors for Craft Competence. | Train trainer/assessors so as to introduce standards for all chem - ical and maintenance craft apprentices. | Report on programme & outcomes. | Chemical Industries Assoc Ltd | 28-11-85<br>31-10-86 |
| Learning Strategies in 2 year YTS. | Ensure Managing Agents & MSC staff are well informed on the full range of learning strat- egies avail for use in YTS. | A full account of the learning strategies available for use in YTS | Deborah Clarke Associates | 08-04-86<br>08-10-86 |
| Learning in Context: Patterns of skill transfer & their trng implications. | To enable schemes within YTS to help trainees to be able to transfer their skills to new & different contexts. | Report.<br>Training materials & guidance for trainers.<br>Assessment exercises.<br>Exemplary materials. | London Univ Institute of Education | 01-04-85<br>31-03-88 |
| Evaluation of Accredited Training Centres (AC). | Determine how well AC's are meeting training needs of YTS staff by looking at quality & quantity of training. | Fuller understanding of training provision to YTS staff & guide decisions on admin & funding policy. | ITS - Industrial Training Services Ltd | 04-04-86<br>30-09-86 |



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| Case Studies Using Job Learning Analysis System. | Evaluate reliability & usefulness of Job Learning Analysis System Assess the cost effectiveness for individual firms. | Job Analysis Instument including user guide- lines & training material. | Fearn Randola Assoc | 01-10-85<br>30-09-86 |
| Evaluation of Local Collaborative Projects LCP. | To document the range of LCP projects in terms of collaborative processes, their use of labour mkt info & their impact on training. | 2 interim reports & 1 final report to be used to develop good practice | 1.SE Assoc<br>2.NW Industry Research Unit | 01-04-85<br>31-10-86 |
| Developing Learning Skills among Adults. | To enable adults to exercise greater skill & control over their own learning, leading to improved flexibility, competence & opportunity | Training methods materials & courses for trainers & learners in industry, training & unemployment. | UWIST - Univ of Wales Institute of Science & Technology | 01-04-84<br>31-03-87 |
| Strategic Change & Human Resource Management. | Examine links between changes in economic environment, business strategy & decisions about personnel & training. | Examples of good practice in human resource management. | Warwick Univ | 01-10-85<br>31-10-88 |
| Training of Trainers | Enable persons involved in training & develop - ment to perform a consultancy role, ie to examine problems & suggest training & other solutions. | Training package for use in soft drinks & other industries. | National Assoc of Soft Drinks Manufacturers | 01-06-85<br>31-12-86 |
| Training & Updating Needs of Trainers. | To develop criteria for training of trainers & proposals for training arrangements in small & medium sized firms using new technologies. | Reports on practice in 6 sectors of industry. Checklists for trainer training workshops. | Manchester Ploytechnic | 01-11-84<br>31-10-87 |
| Employee Relations Training for Managers in New Indust Sectors. | Identify extent & nature of new approaches to employee relations in Scotland & factors under lying their introduction Examine impact on TU bargaining power & other related issues. | Working papers & final report. Training materials. | Employment Relations Ltd | 01-04-85<br>31-03-87 |







BEST COPY AVAILABLE

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| Management Development & Professional Relationships in the Construction Team. | Provide an inter - disciplinary learning package to bring profs from different branches of the construction ind together to learn about mutual problems/develop skills for resolving conflicts. | Distance learning packages on human relations topic. | Leeds Polytechnic | 01-09-85<br>31-08-87 |
| Management Development Scheme - Horticulture. | Improve company performance in the industry; technical & managerial competence of small farmers. Creat new jobs in rural areas. Pilot a management scheme for new entrants to industry | A model scheme for young technically qualified entrants to the agricultural industry. | Agricultural Training Board | 01-02-86<br>31-01-88 |
| Cost effectiveness of Employee Relations Training for Managers. | Assess cost effectiv - ness of different approaches to employee relations training for managers; indicate where similar approaches in other areas of manage - ment might be feasible. | A final report for dissemination. | Employment Relations Ltd | 01-04-85<br>31-03-87 |
| Management Development for Top Teams in Medium Sized Firms. | Help medium sized comp - anies & educational inst interact & generate trng approaches for top team managers. | Training material for publication. Report. | Kingston Regional Management Centre | 01-12-85<br>31-08-87 |
| Management Training in Context of the Company. | Develop a guide based on work already done in the area of continuing development, & outline how to adapt it to solve company problems. | Recommendations for ways in which mgmt educ insts could help with continuing development. | British Inst of Management | 01-01-86<br>31-12-86 |
| Management Development - the long term pay off. | Establish circumstances in which mgmt develop - ment has contributed to performance of main board directors, and assess which processes have been effective and why. | Case studies & report including recommendation for action. | International Mgmt Centre | 01-04-85<br>30-09-86 |
| Open Learning for Aeronautical Engineers. | Facilitate the introduction of an open learning system for aeronautical engineers. | Training material. | Air Transport Industry Training Assoc | 01-04-86<br>30-04-87 |



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| Certificate of Travel Agency Management. | Develop open learning packages for the CUTAM syllabus. | Training material. | ABTA National Training Board. | 01-04-86<br>31-03-87 |
| IFF Case Studies Stage 2 UK Co's. | Produce case studies of training & development practices in 20 successful UK Co's to support promotion of adult training strategy. | Case study material to promote adult training. | IFF Research Ltd | 01-05-85<br>31-07-86 |
| IFF Case Studies Stage 3 International Case Studies. | Produce case studies of training & development practices in 9 oversees companies to compare with similar UK Co's to support adult training. | Case study material to promote adult training. | IFF Research Ltd | 01-05-85<br>31-07-86 |
| Matching Training to Requirements of Adult Learners. | List the points which trainers need to bear in mind when considering different training strategies. | A checklist for publication in Focus and elsewhere. | Industrial Training Research Unit | 14-07-86<br>14-10-86 |
| The Learning Contract. | Exploit the possibility of individuals aquiring credit for learning gained at the workplace. | Contracts to be assessed by CNAA examiners & evidence used to widen access to HE institutes. | Policy Studies Institute | 01-10-86<br>30-09-88 |
| Encouraging Employers to Train. | Explore measures to engender interest by employees in their own training & commitment by companies to the provision of such training. | Report outlining possibility of measures. | Coopers & Lybrand Assoc | 27-05-86<br>29-08-86 |
| Training Role of Managers & Supervisors | Identify what material is available to managers & supervisors to help them develop their training role. | Report on the literature. | Industrial Training Research Unit | 01-06-85<br>31-07-86 |
| Development Programme for Training & Personnel Officers in Wool Industry | Develop a group of personnel & training officers in the wool textile industry. | Report. Develop a group support system. | Confederation of British Wool Textile | 01-12-85<br>31-03-87 |

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| Open Learning for Training of Trainers Materials Developement. | Provide materials to help senior & training managers to discharge their training responsibilities. | 2 packages, videos, workbooks, to assess training & business needs. | Institute of Training & Development | 01-02-85<br>31-03-87 |
| Training Trainers in Training Technology. | Design,develop,test & deliver open learning materials on training technology to meet needs of trainers in commerce, industry & education. | Open learning materials for trainers on training technology. | North West Consortium | 01-09-84<br>31-03-87 |
| Tavistock Institute. | Evaluate entire Open Tech programme, in particular its impact on FE system, employers & individuals. | Reports & summaries of the programme. Case studies of the impact. | Tavistock Institute of Human Relations | 01-08-83<br>31-07-86 |
| Embedded CBT | Embed training into a computer system used in the workplace & provide required training to the learner as defined by the learner's input. | "Model" system including an inference engine to show the effect of training in the work - place,tailored to the needs of the individual. | CNJ Systems Ltd | 01-10-84<br>31-03-87 |
| Manchester LEA | Design, develop, test & deliver OL material for needs of local industry for adult technicians, supervisors & managers. | Open access centre on OL materials on range of topics. | Manchester LEA | 01-10-84<br>31-03-87 |
| Trainer Support Services. | Promote use of open learning for training of trainers & develop open learning materials for trainers of senior managers. | Information services. Advisory services. Open Learning materials. | Institute of Training & Development | 01-02-85<br>31-03-87 |
| South Bank Poly - Office Technology. | Development, production & delivery of open learning in office technology subjects. | Open learning materials & learner support. | South Bank Ploytechnic | 01-02-84<br>31-01-87 |



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| Technology Based Local Development. | Provide information on economic development based on advanced tech, & focus on potential MSC role in facilitating local economic regeneration. | Report to stimulate policy development. | Segal Quince Wicksteed | 09-01-86<br>08-08-86 |
| Patterns of Innovation Diffusion. | Assess potential for predicting technology diffusion. Identify characteristics of adopters. | Recommendations for action change. | Centre for Urban & Regional Studies | 01-10-85<br>30-06-87 |
| Building Skills for Tomorrows Jobs. | Test viability of establishing local labour mkt consortia to monitor skill needs & supply in the construction ind. | Research findings & details of local labour markets for construction | National Economic Development Office | 01-07-84<br>01-12-86 |
| Vocational Training Standards. | Compare level/depth of training in UK & abroad, & examine how far these standards meet the needs of industry. | International comparison /productivity training data. | National Inst of Economic & Social Research | 01-10-84<br>30-09-87 |
| Best Practice in Skill Packaging for CNC Machines. | Determine how new tech affects work organisat- | Identification required skills combination. Guidelines in achieving best practice. | Technical Change Centre | 01-01-84<br>31-08-86 |
| Managers Using Self & Company Learning Effectively. | Help management use staff development to improve productivity, introduce new products, establish wider markets, & improve profitability. | Final report. Model for other Industrial Training Organisations. | Ceramics Industry Training Org | 21-03-86<br>30-04-87 |
| CAP (The Butcher Report). | Produce a CBT programme to test the validity of using new technology to meet skill demands noted in the Butcher Report. | CBT programme for training system designers will be validated as a method of meeting skill shortages. | CAP Scientific Ltd | 01-10-85<br>31-03-87 |
| Computer Aided Fault Diagnosis Simulation. | Provide a means of training students in the systematic use of fault finding techniques thro' simulation & use of computer aided fault diagnosis. Evaluate benefits of this method. | A miniturised conveyor simulation. Applications for software. Report evaluating potential of simulation & expert systems. | Scemagg Ltd | 02-06-86<br>03-10-86 |

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| Evaluation of Coventry Computer Based Learning | Assess effectiveness of the project & of the materials produced within the project. | Formative information giving feed back to Coventry. Published report. | Surrey Univ | 01--1-85<br>01-01-87 |
| ABTA CBT (Open Univ) | Produce a feasibility study on the applicability of new tech in training in the travel industry & across other services. | Lay down the basis of further action & development work in bringing training technology to the workplace. | CNJ Systems Ltd | 01-05-85<br>31-03-87 |
| Technical Change Audit | Piloting a workbook to assist managers when introducing information technology. To finalise structure of workbook ready for publication. | Workbook for use as training material. | Glasgow Univ | 01-11-84<br>30-10-86 |
| Implications of Effect - iveness of VET related R&D Info. | Develop practical recommendations for improving the coordin - ation & dissemination of VET related to R&D information. | Recommendations for action by MSC over a 2 to 3 year period. | Policy Studies Institute | 19-05-86<br>30-11-86 |
| Watford College. | Provide open & flexible access to practical training facilities in new tech for technicians & supervisors in engineering, printing & packaging industries. | Uptake of facilities by students & provision of suitable supporting material. | Hertfordshire CC | 01-11-84<br>31-12-86 |
| NCC | Provide practical train- ing facilities in office automation & a range of computing skills for needs of technicians, supervisors & managers. | Embed open learning in the VET system of the host institutions of W Yorks & Dorset | National Computing Centre | 01-11-84<br>31-12-86 |
| Glenthroes & Buckhaven Tech College. | Provide open & flexible access to practical trng facilities in new tech equipment & systems for technicians/supervisors. | Client uptake of facilities & suitable supporting material. | Fife Regional Council | 20-02-84<br>19-02-87 |
| East Lancs Technology Unit. | Provide open & flexible access to practical trng facilities ip new tech equipment & systems for technicians/supervisors in local industry. | Client uptake of facilities & suitable supporting material. | Lancashire County Council | 09-03-84<br>09-09-86 |



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| Open Learning Resources Ltd | Design,develop,test & deliver open & distance learning materials in computing to meet identified commercial & industrial training needs. | Range of open learning materials in 52 modules, from introductory level to practitioner in programme & systems level. | Computeach International Ltd | 01-08-84<br>31-03-87 |
| BTEC. | Design,develop,test & deliver open learning materials in business application of infora - ation technology to meet industrial/commercial training needs. | 500 learning hours of open learning material | BTEC | 01-11-83<br>30-09-86 |

COMPLETED PROJECTS

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| Manpower for IT. | Examine supply/demand of IT skills. Assess measures to avoid manpower shortages. | Publication: "Information Technology Manpower into the 1990's Available IMS £16.00 | Institute Manpower Studies | 01-08-84<br>31-03-86 |
| Monitoring New Technology & Skill Implications. | Studying effect of new tech on employment, the operation of contract maintenance organisation & developments in retailing. | Publication: R&D 28 "Impact of New Tech Skills in Manufacturing Services" £2.50 | Aston Univ TPU; Sussex Univ SPRU | 01-01-84<br>30-04-85 |
| Technology Monitor | Continue development of prototype technology monitor into operational pilot system, & test on potential MSC users. | Publication: R&D 31 "The Technology Monitor 83-84" Report for 84/85 work planned. | Aston Univ TPU | 01-01-85<br>31-03-86 |
| Motherwell Labour Market Information. | Identifying gaps in knowledge of labour market & training facilities amongst employers,young people & the unemployed. | Final report. | Glasgow Univ | 01-08-84<br>31-03-86 |
| R&D to Improve Education & Training Effectiveness | Identify/propose options for establishing an information research base to improve effect- iveness of UK's education/training system. | Publication: "R&D to Improve Education & Training Effectiveness" £1.50 | Institute Manpower Studies | 01-09-84<br>31-07-85 |

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| **Learning ' Design of Computer Based & IR. Training.** | Role & explicit learning principles of methods that should be considered in design & development of CBT material. | Guidelines for CBT designers/users & exemplary material being developed. | Internal | 01-03-85<br>31-05-86 |
| **Selection & Training for Computer Occupations.** | Assess feasibility of or developing national standards for selection & trng of computer personnel. | Publication:R&D 19 "Training & Selection of Computer Personnel" £2.50 | Occupational Services | 01-05-82<br>30-04-84 |
| **Practical Maths on High Quality YOP. YTS.** | Aiming through action research to improve measurement, assessment & acquisition of practical maths skills on YTS. | Publications: R&D 21 "Practical Maths at Work Learning Through YTS" £3.50. R&D 33 "Work based learning;trainee assessment by supervisors" £2.50 | London Univ Inst of Education. | 01-06-82<br>31-03-85 |
| **Skill Shortages in Manufacturing** | Identify occupations in skill shortage.Assess whether these are getting worse & what firms are doing about them. | Publications for 1984 & 1985 survey available. | CBI | 01-11-84<br>28-02-85<br>&<br>01-12-85<br>31-03-86 |
| **Trainers & Change (Preliminary Study).** | Studying training systems in firms undergoing rapid change. | Report: "The Impact of Strategic Change on Training" | Warwick Univ | 01-06-84<br>30-09-84 |
| **Relevance of Training in 1980's.** | Comparing performances of W Germany/Japan/USA with UK in role of vocational education & training. | Publication:"Competence & Competition" avail NEDO £6.50 | Institute Manpower Studies | 01-12-83<br>30-04-84 |
| **Skills Machinery & Productivity Interviews.** | Pilot survey of engineering firms to determine relative merit of German/British productivity practices. | Report (Internal) | NIESR | 01-02-84<br>30-04-84 |
| **Contract Maintenance.** | Examination of role & limitations of contract maintenance in the engineering industry. | Report. | Sussex Univ SPRU | ended 30-09-84 |



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| IFF Research Stage 1. | Consider the training attitudes & activities of 500 employers throughout Britain. | Publication: "Adult Training in Britain". | IFF Research Ltd | ended 30-06-85 |
| Challenge to Complacency. | Explore how employers might be encouraged to recognise & shoulder their responsibilities in VET collectively & individually, & ensure that their ability to compete is not further eroded. | Publication: "Challenge to Complacency" £2.50 | Coopers & Lybrand Assoc | ended 30-11-85 |

# PROMOTION OF COOPERATION AMONGST RESEARCH AND DEVELOPMENT ORGANISATIONS IN THE FIELD OF VOCATIONAL TRAINING

WORKING MEETING
11-12 SEPT 1986

WORK RESULTS OF THE FEDERAL INSTITUTE
FOR VOCATIONAL TRAINING

BERLIN/BONN

CEDEFOP
BERLIN
1986

## 1. Federal Institute for Vocational Training

The Federal Institute for Vocational Training (Bundesinstitut für Berufsbildung - BIBB) has been commissioned by the government to undertake research and development in order to examine and clarify the basic principles of vocational education and training, to establish the contents and aims of vocational education and training, and to adapt these to technical, economic and social developments.

The work of the Institute covers three main areas:

### 1.1 SUPPLY OF AND DEMAND FOR VOCATIONAL TRAINING

The considerable demand for in-firm training places (more than 740 000 annually over the last three years) is only falling slowly despite the marked drop in the number of school leavers which began in 1982 because of the situation on the labour market. The number of young foreigners looking for a training place is likely to continue to rise into the 1990s. A major share of the increased training provision in recent years covered occupations in which the number of active employees was on the decline. The discrepancy between the numbers of trainees entering the dual system and those finding a job upon completion has, therefore, become more marked. In future, more people will change to new occupations and there will be increased need for retraining programmes.

## 1.2 FUTURE DEMANDS ON THE VOCATIONAL TRAINING SYSTEM

The extensive introduction of new technologies changes both economic and work organizational structures and thus, by extension, the qualification requirements of the workers. Vocational training plays a key role in this respect because qualification schemes can influence the future organization of work.

## 1.3 STANDARD OF VOCATIONAL TRAINING PROGRAMMES

For various reasons, the question of the standard of vocational training is assuming increasing importance. The main committee of the Institute suggested in its recommendation on the "equivalence of vocational and general education" that there should be a ruling whereby those who successfully complete further training should be placed on a par with craft and industrial masters, in order to guarantee access to a technical university.

The concept for the restructuring of metal and electrical engineering occupations was drawn up jointly by employers and trade unions on the basis of the research findings of the Institute. It marks an important step towards the further development of the dual system. The 42 metal occupations have been grouped into six, and the 12 electrical engineering into four new occupations.

## 2. Activities of the Federal Institute in 1985/1986

The activities of the Institute are divided into nine fields:

### Field 1: Structure and transfer of qualifications

In order to provide a sound scientific basis for new ordinances, structural and procedural questions are examined and guides are drawn up with advice on identifying problem areas, carrying out case studies and gathering and interpreting results which are then incorporated into concrete proposals for action. Thus, in the **restructuring** of the 42 industrial **metal occupations** an **analysis** was made of the current situation, which afforded insight into present qualification requirements and the links between skilled occupations.

An important prerequisite for the concrete planning of individual measures to intensify on-the-job learning are the studies carried out on workplaces used for training purposes. They provide information on the right way of handling occupation-specific tasks. Descriptions of this kind covering the **metal and electrical engineering sectors** are incorporated into **operation programmes** which serve as the basis for further project work in this area.

Field work for a **repeat** of the 1979 study on "**evaluating vocational qualifications**" has begun. Particular attention is to be given to the transition from vocational

training to working life. The basic hypothesis is that the phase in which trainees enter their **first job after completing training** plays an important vocational qualification role. In steady employment, they apply their newly acquired skills, attain increased proficiency and are given an opportunity to assume responsibility for themselves and their actions. This study, therefore, aims to examine and identify the vocational qualification processes in the first years of employment.

Field 2: Technological-organizational changes

Extensive **teaching material** has been developed as a back-up for in-firm training in the use of microcomputers in **electrical engineering**:

- a manual "Introduction to microcomputer technology", an aid for trainers involved in special continuing training programmes;

- a **teaching film** "This is how a microcomputer works" with back-up material;

- 14 **exercises** (on the subject of advanced digital technology) as preparation for microcomputer technology with back-up material (e.g. vugraphs) for trainers, films on printed circuits and instructions on how to construct the practice hardware;

- an extensive **glossary** with the most important microcomputer terms.

A **training package** has been developed for initial and continuing training in **CNC technology.** It contains:

- 10 introductory exercises to CNC technology;

- basic information with back-up material (e.g. vugraphs) for trainers;

- 1 **teaching film** "How to operate a CNC turning machine",

- 13 further exercises on CNC technology (separate sets for turning and milling) with back-up material for trainers,

- software for turning and milling on a **CNC simulator.**

The CNC simulator is designed to support training in CNC technology. It imitates all functions of CNC machines.

In the case of SPC (**stored-programme control**), basic practical and theoretical material has been developed for training purposes. Industrial production processes are becoming increasingly mechanized and automatized with the help of individually programmable control systems. Consequently, there has to be a marked move away from induction into product-specific and tool-specific tasks

and curricula will, in future, favour the increasingly important core skills.

Owing to the increasing **automatization** of production and assembly, qualification guidelines are being drawn up for workers affected by this new technology. For example, in **metal occupations in the production sector**, tried and tested know-how in mastering new technologies is to be compiled, expanded on, and made available for use in further training programmes.

"New technologies in vocational training" is the title of a **series of pilot projects** in enterprises which have been carried out by the Institute since 1984. Altogether 25 projects have been selected which are to cover **different sectors of the economy** and technical and organizational fields of application such as the various uses of microelectronics in the industrial-technical sector (CNC, CAD, CAM, IR, SPC, "PMCS",[1] etc.) and more recent communication technologies in the commercial-administrative sector. In these projects a broad spectrum of transferable qualifications are being tested which are likely to encourage small and medium-sized entrepreneurs to become more innovative and, at the same time, to increase the profesional skills of white and blue collar workers. The pilot enterprises have incorporated these

[1] CNC: Computer-aided control, CAD: Computer-aided design, CAM: Computer-aided manufacture, IR - Industrial robotics, SPC: stored-programme control, "PMCS": process measuring and control technology

new qualifications into teaching objectives and have structured them on didactic lines. On this basis, they are at present developing and testing new teaching material.

Up to now, the concepts of "initial training in information technology", "CAD-training" and "CAM-training" have not yet been developed into concrete training plans. However, they can assist the interested enterprises in instructing draughtsmen in the use of new technologies.

Field 3: Development and structuring of vocational training courses

In 1985 the following skilled occupations were modernized: glazier, glass and ceramic painter, wood mechanic, concrete worker, precast concrete, cast stone and terrazzo worker, and salesperson in the food industry.

This restructuring affects skilled occupations in the following areas: metal, electrical engineering, retail trade, office administration, printing, chemistry, covering a total of 800 000 trainees.

Prior to this restructuring, an analysis was made of **electrical engineering occupations** in order to obtain detailed information on the new formulation of training contents:

- considerable importance is attached to tasks such as handling circuit plans, tables and manuals, measuring electrical signals, surveillance of electrical functions, operation and maintenance.

- training contents are to be brought up to date with new technological developments, areas such as **digital technology** and **process measuring and control technology** are to be given more priority.

In a second phase, all qualifications in electrical engineering were recorded and categorized in preparation for the development of a new structure of occupations. The **686 individual qualifications** were **grouped together** and then categorized. This data provided the Institute with the basic criteria for four skilled occupations: electronic machine fitter, electronic engineer in the energy, industrial and communication fields. The new ordinances are expected to come into force on 1 August 1987.

In the course of the restructuring of the skilled occupation "office clerk", a basic guide to using PCs is to be developed which could then be used in other clerical training ordinances. Of course, this must not be restricted to the few moves needed to work the visual display unit, but must also cover handling and understanding the operating system in order to ensure optimal use of the equipment. The new communication technologies are counteracting the earlier division of the

two occupations "Kaufmann" and "Bürogehilfe"[2]. In some cases, the overlapping of duties is so extreme that employees with these different qualifications compete for the same jobs upon completion of training. Consequently, the Institute has suggested that the two occupations be merged. It was felt that the reasons for a continued division of the two occupations had been rendered invalid by the further development of office technology.

A draft for the restructuring of the occupation "clerk in the **retail trade**" has been drawn up which envisages a three-year training period for a skilled occupation with the emphasis on the sales side. This regulation is likely to come into force in the course of the year.

In the field of technological **environmental protection**, a completely new skilled occupation - **waste disposal worker** - has been created. The practical application of this new training ordinance imposes considerable demands on training enterprises and trainees. For this reason, under the aegis of BIBB a group of experts have elaborated extensive and detailed explanations of this new training ordinance.

In 1985 two models for advanced commercial training were elabored for the "Fachkraft Rechnungswesen/Finanzierung"

[2]These are two separate clerical occupations, on different levels, the training of which is governed by the Vocational Training Act (Berufsbildungsgesetz).

and "Industriefachwirt"[3] in close cooperation with practitioners. Because of their innovative character, these two advanced training models are being tested in teaching and examination practice.

Field 4: Development of training material

Work by the Institute in recent years on developing training material focussed on **electrical engineering and metal technology.** One central theme is at present the development of media for **new technologies.** Furthermore, training material is under preparation for the following areas: wood technology, construction, chemistry, physics, biology and the retail trade. In 1985 training material for use in in-firm training was also prepared for the **textile technology** and **clothing sectors:**

- 5 training packages for training courses with separate accompanying booklets for trainers, and loose-leaf tests,

- 2 short films for the clothing industry and related occupations,

- 1 training package for the course "criteria for the evaluation of fibre materials in textiles", (manuscript).

[3]There are no direct English equivalents for "Industriefachwirt" or "Fachkraft Rechnungswesen/Finanzierung".

In the field of **wood technology**, a study was made of how, for example, film or video technology could be used more effectively to demonstrate difficult tasks or techniques from everyday practice.

Field 5: Organization of vocational training

In one research project, an attempt was made to place the manifold works on qualification improvement (effectiveness of training ordinances, dissemination of media, transferability of results from pilot projects, projects to increase the aptitude of trainers, etc.) in an overall context as a means of improving "**input**".

The different forms of cooperation practised between firms and other teaching bodies in the field of initial and continuing training have been analyzed in order to draw up concrete plans for assistance.

In the case of **distance learning programmes**, principles for the development of practical help for seminars/support tutorials have been elaborated:

- Documentation research confirms the existence of different attitudes to seminars/support tutorials depending on whether they are part of further or higher education distance learning courses.

- Various concepts for seminars/support tutorials were presented in so far as they could be identified in the

information and advertising material of the respective distance learning institutes.

- The results of a survey of lecturers revealed shortcomings in teaching practice. One goal of distance learning courses is to achieve improvements in this very area.

- Experts have suggested that a further project should promote not just the qualification of lecturers but also of all those involved in distance learning (authors, corrector advisors, etc.).

Field 6: Staff in initial and continuing training

For the group - training advisors in craft trades - further training seminars have been tested in which they learn to cope with the special needs of slow learners, foreigners and other disadvantaged groups. Upon completion of these experiments an assessment will be made of whether these results could be applied, in particular, to the further training of teaching staff. Aids in teaching people to deal with the advisory needs of adults are also to be developed.

Proposals are to be elaborated on the continuing teacher training of **part-time trainers** in firms in the retail trade.

By means of model seminars for **examiners** and the background material developed for them, the Institute was able to improve the content of questions set in examinations. Aids were developed for examiners to help them draw up tasks for written examinations in the printing industry.

At the beginning of 1985 the Institute took over the duties of the former Centre for the promotion of trainers (Ausbilderförderungszentrum - AFZ). Here, the Institute's aim is to incorporate research approaches and pilot project results into **seminar concepts** for the continuing training of trainers.

The themes of these seminars are:

- guides to independent learning,
- women in industrial-technical occupations,
- young Turkish people in vocational training,
- new aids in training on CNC machines.

Field 7: Vocational training for specific groups

Since 1980 a series of pilot projects have been underway to open up industrial-technical skilled occupations **to girls.** Practical examples have been used to demonstratee that a large number of occupations pursued almost exclusively by men, are suitable for women, too. Training of girls in the 75 occupations involved did not call for any particular changes in the content, teaching methods or

organization of training. The physical effort required of them proved no handicap. The girls did, however, experience initial difficulties owing to their lack of previous technical experience. Just under 65.8 % of the women who completed their chosen course of training, took up employment in their new occupation. The public echo was considerable: between 1980 and 1985 the proportion of girls in these occupations increased from 1 % to 5 %.

In the Institute recommendations were elaborated for nationwide, uniform **model training courses for the handicapped.** To date, recommendations for new ordinances for the chambers responsible for the metal sector, office administration, wood and colour technology have been submitted. A study is now to be made of ways of extending and improving training provision and conditions for the handicapped, and proposals are to be made of ways of improving training practice.

The analysis of the vocational situation of **young foreigners** is the basis for the data which have been collected every year since 1983 on the planning and implementation of vocational training for young foreigners. Research is concentrating increasingly on providing aids for vocational preparation, vocational training and remedial courses for young and adult foreigners with particular regard to the special qualification requirements of training and back-up staff.

Field 8: Situation on the training market

The main task here is to gather and evaluate information which could help to provide advance information on developments, trends and possible conflict areas on the vocational training market. The results are published in the annual **Vocational Training Report** of the Federal Government. In addition, a regional and sectorial breakdown of trends in training places is presented in various publications.

At the beginning of 1985 approximately 10% of the trainees had passed the "Abitur" (university entrance requirement) or "Fachhochschulreife" (entrance requirement for a specialized college with university status). Compared with the previous year, this number increased considerably by 47 000. In commerce and industry alone, there was an increase of 34 000. In this training sector 119 000 trainees were undergoing training who were entitled to study at an institute of higher education. One in three "Abitur" holders decides to enter an apprenticeship or an apprenticeship and higher education. 53 % of women attending dual training have passed the "Abitur". A growing number of "Abitur" holders are entering qualified industrial-technical occupations such as machine fitter, electrician, radio and television mechanic or chemical laboratory assistant. Their share in the top five clerical occupations has also risen. In the case of bank clerks, one in two trainees has the "Abitur" or

"Fachhochschulreife". One in seven "Abitur" holders who entered an apprenticeship, took up the skilled occupation.

For the first time since 1985 trainees with school certificates guaranteeing access to higher education are in the majority in the dual system. Consequently, young people with the "Hauptschulabschluß" (certificate of general compulsory education9 or no certificate whatsoever are going to find it increasingly difficult to find a training place.

Between 1980 and 1995 the number of **school-leavers** is expected to fall by 40 %. At the same time, the structure of school-leavers is shifting towards higher school-leaving certificates. The supply and demand structures on the training market are marked by a growing supply surplus in the industrial-technical sector and a demand surplus in clerical and administrative occupations.

Field 9: Vocational training centres: costs and funding

In a study by the Institute the **programmes commissioned by all unemployment offices** in the field of further training and retraining in 1982 were analyzed on the basis of selected criteria. The results were processed region by region and presented in cartographic form. In case studies the determinant factors and decision-making processes for the planning, implementing and organizing of these training measures were analyzed as were the links between curricular elements and their effects on quality,

success rates and costs. On the basis of these results working aids were elaborated for the systematic development of further training and retraining practice.

In the field of **continuing training** an extensive analysis is being made of supply and demand in selected regions. The aim is to analyze factors which promote and impede the development of supply and the evaluation of demand, and to assess the importance of cost benefit considerations in the implementation of in-firm and individual continuing training.

In vocational training, increasing importance is to be attributed in future to questions of costs, capacity and use because the increased application of new technologies in the production and services sectors will have considerable effects on the placement rates in training programmes and on the need for further and continuing training. The resulting demands on vocational training centres mean that, in order to ensure the success of their programmes, they will have to keep pace with new developments.

Because of the importance of the cost factor "training allowances" in in-firm vocational training the Institute has, over the last few years, carried out regular studies of such allowances by analyzing collective bargaining agreements. A "training allowances" data bank has been set up which can provide a constantly up-to-date comparison of allowances in the respective skilled

occupations. At present, it contains information on roughly 170 recognized skilled occupations. Calculated on the basis of all recorded skilled occupations, the average monthly training allowance increased from DM 396 in 1976 to DM 602 in 1984.

PROMOTION OF CO-OPERATION AMONGST
RESEARCH AND DEVELOPMENT ORGANISATIONS
IN THE FIELD OF VOCATIONAL TRAINING

WORKING MEETING
11-12 SEPT 1986

# DEVELOPMENT OF RESEARCH IN THE FIELD OF VOCATIONAL TRAINING IN BELGIUM - FRENCH AND GERMAN SPEAKING COMMUNITY

ONEM - BELGIUM

CEDEFOP
BERLIN
1986

## Development of research in the field of vocational training in Belgium

In Belgium, vocational training research is progressing in line with the devolution plans of the government which should be completed by 1987-1988.

Although there are no formal structures for developing research in vocational training, the various competent bodies (education, ONEM, "middle classes", special departments) do have services directly responsible for gathering, processing and analyzing information on basic training and adult training.

Some subjects crop up again and again in the titles of publications and reports in the course of colloquia and seminars which are organized increasingly by the competent bodies or by the numerous private associations which have been created in response to the crises affecting the economy and unemployment, in particular youth unemployment.

These subjects deal with the socio-professional integration of young people into the traditional labour market or into a "social economy" which provides some alternatives to classic forms of employment.

It would seem that more close cooperation is developing between the department of national education (which is national but covers both linguistic communities) and the other already decentralized vocational training bodies (i.e. French-speaking and Dutch-speaking). Devolution of responsibility for education and (vocational) training to the communities will be possible in the years to come. For that reason, we are presenting this document in two sections, one dealing with the French and German-speaking communities, the other with the Flemish community.

A. Flemish Community
(See text by LEYMANS) 1)

B. French- and German-speaking communities

As agreement has been reached to organize vocational training on a joint basis, the following remarks cover the French-speaking populations of Brussels and Wallonia and the German-speaking cantons to the east of the country, Eupen and St. Vith.

A year ago the report on vocational training research in Belgium finished by describing the main trends in vocational training research:

1. Knowledge of firms' training needs and the description of the resulting job profiles (studies in the tertiary and building sectors).

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1) Vocational Training provided by the National Manpower Service (Flemish Community)

2. Methodological research in the creation of new businesses, including those which develop or draw on advanced technologies.
   Special vocational training programmes for those setting up businesses.

3. Development of basic or further training programmes in the use of informatics in intellectual and manual occupations.

4. Development of distance training by means of national or community television networks.

5. Evaluation of the conditions for young people undergoing part-time training under the extended scheme of compulsory education linked with an assessment of the responses of schools, firms and the pupils, themselves.

Points 1 and 4 have been the focus of particular attention by the various national representatives who attended the conference on 20 and 21 May 1985. This is either because as in point 1, this was one of the main preoccupations in their own studies or, as in the case of point 4, this constituted a new trend with programmes covering the same grounds as planned projects in countries less advanced in this field.

The other equally pertinent points are about to be taken up in other Community countries, too. Although this

demonstrates the consistent nature of certain interests throughout Europe, it makes it difficult to compare programmes and their results.

We, therefore, are now going to summarize the trends of the past year and to add other, more recent developments:

a) Studies in enterprises are continuing on professional developments linked with new technologies in trades in shell construction and interior finishing and in office occupations.
As far as the construction industry is concerned, the study has already been extended several timesto cover reassessments of training programmes and of the technical equipment of certain training centres.
In the case of office jobs the study must concentrate on ten subjects, three of which were the subject of a publication (and an introductory paper):

- recruitment by firms for positions in the office.

- introduction of informatics in the administration and organization services of enterprises.

- importance of knowledge of spoken and written word both within and outside the firm.

The other subjects are to be taken up in September 1986:

- knowledge and application of foreign languages,
- dissemination of information within the firm,
- multi-skilled and specialist office workers,
- commercial requirements within the firm,
- new demarcation between the tertiary and secondary sectors,
- attitudes of workers in firms,
- ...

From 1987 on, the study will be carried out on a permanent basis and the results will be incorporated into the training programmes of ONEM centres.

b) Difficulties in finding a job have, quite naturally, led some job-seekers to set up their own business either as self-employed workers or as the heads of a small- or medium-sized enterprise. This applies especially to existing firms which have been taken over under such schemes. The initial level of the prospective head of an enterprise is an indication of the required level and form of training and explains the need for different methods to cope with the differing levels.

In 1985 an experiment was conducted successfully in developing the principles of modular training (awareness - training - development of the project - monitoring). In 1986, a group of prospective entrepreneurs, some 75 trainees in French-speaking areas, are in the process of implementing their

projects. An evaluation will be presented in September 1986.

For more than 2 years now, in an EEC-backed scheme similar to the "Local employment initiatives", groups of the unemployed from all over the same region (Nivelles - Charleroi - Mons) are also involved in projects to create new firms, either of the classic or "alternative" kind. Evaluation of these projects will also be carried out at the end of the year.

Finally, there are plans for a similar programme to help certain groups of manual workers set up their own businesses which is to begin at the end of 1986. It envisages cooperation between these workers and "tertiary" trainers.

It should be added that these programmes operate against the background of a vast network of cooperation amongst the bodies used to offering this kind of support to workers wishing to set up their own firm (jobless or not), ONEM and a certain number of sponsors acting on behalf of the communes, "middle classes", chambers of commerce, and other non-profit organizations set up specifically for this purpose with EEC support.

c) Training of computer experts has been the responsibility of schools and higher institutes and universities for 15 years. The increase in the need

for computer experts and, above all, in users of computer technology has not been accompanied by a reexamination of computer literacy or further training programmes, despite the increase in the number of clubs and other private or public bodies which are developing schemes covering both basic and continuing training.

At the moment, at the level of national education, it seems that this large gap could be filled by clear-sighted choices and the provision of sufficient funds.

As far as continuing training is concerned, interest in new programmes is marked amongst users of sometimes highly specialized software who more attracted by methods for its use than by technical constraints. The management of innovations particularly in office technology and in robotics, has led to interesting developments although the appliocation of robotics in industry still seems to be limited.

A certain gap can be observed between the remedial programmes which are always geared towards already outdated goals (programming, etc.) and rarely futuristic avant garde progarmmes which meet the needs of a small number of initiated users.

Developments in these areas reflect the needs of clearly definable groups.

d) The confusion surrounding distance learning is born of the geographical ambiguity of the programmes and their objectives. Several correspondence schemes merely offer a system for the postal distribution of educational documents.

Through the medium of Belgium's television broadcasting network, national and community stations have, for several years, been able to offer a new kind of teaching relationship which, in some cases, is interactive.

Methods for programmed instruction which were initially paper-based, rapidly changed to give access to the "education machine" which, in turn, could easily be adapted to accommodate audiovisual and computer techniques.

For several years now, courses of this kind broadcast on the national RTBF network, have reached thousands of television viewers. They draw on a multi-media package: audiovisual back-up - printed syllabus - audio cassettes - postal contact for exercises and tests.

The recent class in Dutch for French-speaking Belgians added conversation courses to these other forms of

support. Groups of between 6 and 8 "pupils" meet once a week under the supervision of a tutor. At the end of 1986 a survey will be made of these courses which will have covered more than 6 000 pupils and 250 tutors working in firms and on a private basis.

One further detail, another televised computer literacy course reached more than 13 000 "pupils" in 1985.

e) The extension of compulsory education in Belgium two years ago enabled 16 to 18 year olds who so desired to choose an alternance training system: theoretical instruction in a school, "practical" training in a firm, training centre, or quite simply at home. These schemes are run by centres for part-time education.

On the French-speaking side, 3 600 young people constitute the potential target group for these centres (1985-1986), of whom 1 100 will actually undergo training of this kind.

Both in basic education networks and in ONEM schemes, a study is being carried out to evaluate the first results and to draw the necessary conclusions concerning, goals, programmes and the preparation of trainers for these centres.

The above trends cover the major experiments and research work in the development of vocational training.

Most of them reflect positive moves to improve the level of training and to increase productivity.

However, the definition of "vocational training" is wider today and less geared to establishing an adequate balance between supply and demand on the labour market.

The descriptions of Belgium projects subsidized by the European Social Fund in 1985 confirm this view.

Thus, in universities in which the social science faculties have introduced specialist programmes oriented towards the training of trainers for adults, specific research in this field has begun. Up to now, dissertations and theses have been prepared by researchers linked with traditional bodies dedicated to vocational training. This new interest does, however, give us an inkling of developments in the near future which will be on stricter, scientific lines.

# PROMOTION OF CO-OPERATION AMONGST RESEARCH AND DEVELOPMENT ORGANISATIONS IN THE FIELD OF VOCATIONAL TRAINING

WORKING MEETING
11-12 SEPT 1986

## VOCATIONAL TRAINING PROVIDED BY THE NATIONAL MANPOWER SERVICE-FLEMISH COMMUNITY

RVA - BELGIUM

CEDEFOP
BERLIN
1986

Vocational Training provided by the National Manpower Service (Flemish Community)

Second report for CEDEFOP project 2.405: "Promotion of cooperation between research and development organizations in the framework of vocational training".

1. For the purpose of the meeting on this theme held in Berlin on 20 and 21 May 1985 an outline was given last year of the objectives of the National Manpower Service (Rijksdienst voor de Arbeidsvoorziening, RVA) and of a number of related development projects. These relate primarily to the new technologies, through there is of course also innovation in the area of approaches to teaching and learning. As the first report made clear, the RVA's Vocational Training Directorate is not concerned with research in the normal sense, but develops projects whose aim is to keep vocational training up to date.

1.1. The development projects

Within the framework set by the Flemish Executive, which lays down overall policy on vocational training for the Flemish Community, the RVA adopted a number of objectives concerning: modular approaches to curriculum structure; collaboration with other training institutions, close cooperation between vocational training and employment services; polyvalence; awareness of the needs of divergent target groups; and the reinforcement of training activities in the area of new technology.

1.1.1. The fields covered

It was decided to set up a limited number of new and specialized training centres in order to permit the concentration of the expensive equipment which would be needed. The fields of study to be covered were: electronics and automation; energy management and new heating technologies; textile trades; computer-aided design and manufacture (CAD/CAM); robotics; microelectronics; office automation; and graphic trades. It should be added that the general field of information technology had already been the focus of considerable activity since the end of the 1970s, while in such traditional areas of study as construction and engineering trades every effort is also made to keep abreast of current developments.

2. The development of the projects

Overall policy was translated into goals and timetables for 1985 and 1986. These timetables are the result of collaboration between the RVA Directorate, the Subregional Employment Services and the Subregional Employment Committees. The following stages were completed in 1985: preliminary studies; draft proposals and their discussion; the identification of the most suitable locations; research into the best training resources; definition of priority objectives; and the transfer or recruitment of staff.

2.2. Activities

2.2.1. Training centre for energy management, Mechelen

This centralized training centre became operational in 1985. Cooperative ventures have been established and over

235 persons have already received training, of whom 73 were in employment. The centre has been equipped with a microcomputer system for energy management, while the installation of a central computer for premises automation is to follow in 1986. The target groups reached range from maintenance technicians for heating-oil burners to engineers in search of employment. The fields covered, which already include all new heating technologies, will in future be extended to cover steam energy and air conditioning, while the area of premises automation is to be further diversified.

2.2.2. Training centre for microelectronics, Oudenaarde

This centre too became operational in 1985, providing training for 126 persons, of whom 86 were employees following short advanced courses. Plans exist for the addition of modules concerned with PCB design and layout and IC design; in connection with the latter there is to be collaboration with Louvan university centre for microprocessor design as part of a distance learning project. Support is also given to the centre for applications of CAD/CAM in clothing manufacture (2.2.3) in the area of control and management systems.

2.2.3. Training centre for CAD/CAM in clothing manufacture, Oudenaarde

As in the other centres for new technologies the first courses provided were initiation courses (e.g. for pattern makers and needlework teachers). The user courses, e.g. CAD grading and CAM production control, are planned from

1986 onwards.

2.2.4. Training centre for robotics, Vilvoorde

In 1985 training was provided for 227 people at the centre, which is the only one of its kind in Europe. Its position is a special one, because in addition to its training function it carries out research, in collaboration with firms, into the industrial robotization process (in connection with courses) and because it has an informative role vis-a-vis industry (the introduction of robot-related automation processes). In future there are to be modules concerned with CAM-CMC and robot programming.

2.2.5. Training centre for textile trades, Kortrijk

Training was given in 1985 to 110 weavers and 18 loom maintenance technicians. To maintain efforts in this field at the same level very considerable investments will be needed; initially these will be concentrated on a laboratory for dyeing and improving.

2.2.6. Training centres for CAD/CAM, Bruges and Hasselt

Here too the stress thus far has been on initiation courses (attended by 937 persons in 1985), but 232 existing users also followed courses last year. Plans for the future include CAD/CAM courses relating to electronics (PCBs and ICs), robotics (software), information technology in construction and CAD in technical drawing.

2.2.7. Training centres for office automation, Kortrijk, Dendermonde, Louvain, Hasselt and Brussels

Computer applications and office automation, of particular importance in the tertiary sector, will continue to be a major focus of attention in the future. The area of information technology has been promoted since the end of the 1970s through numerous cooperative ventures producing thousands of individual training courses, many of them provided on Saturdays.

With over 25 different types of course a very wide range of target groups can be reached. Courses currently on offer range from basic familiarization work to computer audit courses. Some of these training modules are now being given in the office automation centres, along with courses on office automation methods and computer-based accounting. Existing equipment - mainframe terminals and word-processors - has been supplemented by personal computers.

In 1985 1285 people followed courses in an office automation centre. Future expansion plans concern the implementation of simulations and the incorporation into the centres of office systems. A PC-based teaching system, known as Teachnet, became operational in 1986.

2.2.8. Training centres for automation, Antwerp, Ghent, Bruges, Hasselt, Louvain and Vilvoorde

Since automation covers a very broad field, including electronics, electrical engineering, robotics and pneumatic and hydraulic technologies, a number of centres were designated to provide the relevant training using integrated training packages. Thus far 877 persons have received training

using the automation modules. Future development will be towards integration and centre specialization, with Antwerp concentrating on process automation and Vilvoorde on automation in the form of robotics.

2.2.9. Training centres for graphic trades, Turnhout and Louvain

The first training courses were provided in 1986. The equipment required is both extensive and expensive, and the stock is to be systematically expanded. The centres are concerned with photo-typesetting, reprophotography, assembly, offset (Louvain) and copying, offset multicolour and finishing (Turnhout).

3. Conclusion

The RVA considers the efforts made in 1985 to expand the new centres to have been successful. These efforts involved the organization as a priority of numerous initiation courses and the first courses for existing users and the devotion of considerable time and effort to staff recruitment and the installation of equipment.

For the future priority will be given to the further training of staff members (e.g. in the tertiary sector the instructors receive systematic ongoing training in the most widely used PC and mainframe software). In addition the number of courses for existing users is to be sensitively increased, careful attention is to be devoted to profiling and guidance and research is to be carried out, in collaboration with other bodies, into labour market requirements to facilitate

decisions on the priority target groups for training.

Expenditure, planning priorities, cooperative links, the practical organization of centralization, methodology and results are to be subject to ongoing evaluation.

# PROMOTION OF COOPERATION AMONGST RESEARCH AND DEVELOPMENT ORGANIZATIONS IN THE FIELD OF VOCATIONAL TRAINING

WORKING MEETING
11-12 SEPTEMBER 1986

## OUTLINE OF ACTION FOR 1986

ISFOL
ISTITUTO PER LO SVILUPPO DELLA FORMAZIONE
PROFESSIONALE DEI LAVORATORI
(INSTITUTE FOR THE PROMOTION OF WORKERS'
VOCATIONAL TRAINING)

CEDEFOP
BERLIN
1986

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## OUTLINE OF ACTION FOR 1986

### Introduction

The "Employment Policy Statement" prepared by the Ministry of Labour and Social Security proposes new ways of tackling problems, based in particular on the ability to plan ways of increasing and organising new resources and the need to develop in Italy a culture which places more emphasis on reform and the spirit of enterprise.

The "Ministry of Labour and Social Security Report" contains two main types of proposal:

a) flexible labour market policies intended to close the gap between supply and demand by providing a new regulatory framework;

b) employment policies which will stimulate dynamic public initiatives paving the way for an additional demand for labour throughout the economy.

Many areas of action are singled out. The aims of the main measures may be summarised as follows:

1) to make wages policies more flexible. It is hoped that the establishment of a kind of starting wage will make it easier for young people to find their first jobs, i.e. new employees will be paid a salary which is more in line with their actual abilities and professional skills;

2) to diversify employer/employee relationships by promoting and implementing a number of different

working relationships (part-time, Law 863/1984, work and training contracts, solidarity contracts, etc.) to reconcile the actual requirements of job vacancies with the need for a more flexible use of the labour force;

3) to deregulate the rules governing the employment of workers, taking account of the need to relax the current legislative constraints on placement so that placement itself may take on a central role in the management of labour supply and demand;

4) to provide new regulations for workers laid off or made redundant, ensuring that the CIG (Earnings Supplement Fund) is used for its original purposes and not in the all-embracing way in which it is currently used. An improved definition and standardization of unemployment benefits covering all types of unemployment and in particular an increase in the amount of benefit is also required;

5) to revise Law 300/700 (The Workers' Statute) to bring it into line with changes in the social and economic framework, particularly those articles which regulate individual redundancies.

The management of work time is a further field of action. Changes in this area will be based on two measures: restructuring working hours to meet the new labour demand requirements arising from the widespread introduction of new technology, and vocational training. As regards vocational training the Report highlights the need for action in two areas: forestalling the possible "deskilling" risks to which people currently in employment

may be exposed in the near future, and providing the potential for new jobseekers to acquire the ability to adapt to a system whose quality is constantly improving, providing them at the same time with the skills required to work with the new machinery.

Reform of the vocational training sector is urgently needed to ensure: a) an improved use of vocational training within firms; b) better integration of production and training structures; c) the use of non-standard employment contracts; d) the exploration of new types of employment (socially useful work); e) the identification of those jobs and trades having a higher vocational skill content.

Providing all workers and jobseekers with the opportunity to use training structures in more flexible ways is just as important and this will be achieved by a radical overhaul of the information-training-placement system, giving responsibility for this system to a national network of regional labour exchanges. From the point of view of the funding of vocational training, there is a need for a more equitable system of charges to be paid by those agencies (firms, the State, etc.) which derive the most benefit from specific training schemes.

These are, in brief, the main areas of action which the Ministerial Report sets out to make the labour market more flexible and therefore to increase employment levels.

The picture is completed by initiatives to increase employment levels:

a) the extraordinary plan for youth employment which hopes to find work for 40,000 young people, including

20,000 in Southern Italy, under employment/training contracts. ISFOL's cooperation has been directly requested under Art. 2 of the Law which makes a Technical Assessment Committee appointed by decree of the Minister, and including ISFOL, responsible for approving projects which implement this plan and associated training programmes;

b) the Minister's plan for Southern Italy designed to promote and develop the spirit of enterprise amongst young people in Southern Italy in an attempt to stimulate the creation of production and work cooperatives and companies chiefly by young people aged between 18 and 29 with offices in the South. The plan makes provision for capital and management grants and loans on easy terms and sets up services to provide technical assistance during the planning and launch of new ventures and vocational and skill training schemes tailored to the specific needs of projects;

c) the joint "cultural heritage" initiative by the Ministers of Labour and Cultural Heritage: A budget of LIT 300,000 million has been earmarked for 1986 for this initiative which has the dual objective of enhancing Italy's cultural heritage and making a real, albeit partial, contribution to the problem of long-term unemployment amongst young people, particularly those with an average to high standard of education. The Ministry of Labour will use this allocation of LIT 300,000 million to provide work for some 10,000 young people. LIT 30-50 million will be invested in each

employee, 65% of this amount on wages and training costs and 35% on new technology costs (hardware and software). Firms responsible for the various projects will be able to choose which young people they employ under fixed-term contracts ending on completion of the project.

d) the "Gaspari" draft law designed to provide public sector employment for people receiving extraordinary CIG payments or people in special forms of unemployment in Liguria, Lombardy, Piedmont and Sardinia and to fill specific types of vacancies in local bodies requiring specific job profiles and vocational skills.

The Minister of Labour's Directives of 18.12.1985 call upon ISFOL to make a "substantial and significant" contribution to the achievement of the above objectives and to the reform of the vocational training system to make it into an effective instrument in the fight against unemployment.

The role and aims of ISFOL and these Directives provide a basis for a number of areas of action.

**Continuing and long-term activities and areas of action**

ISFOL activities took two main forms in 1985:

1. consolidated and continuing activities;
2. priority action in the form of four multi-annual projects coming under the three-year plan for 1984-86:
   1. the planning and testing of concrete job creation

and training initiatives;

2. study of the changes taking place in the production apparatus and their effects on job offers, industrial relations and professional skills: analysis and potential action, particularly as regards vocational training strategies for innovation in small and medium-sized firms;
3. planning and testing of new training models in line with labour market trends and changes brought about by the introduction of new technology, paying particular attention to objectives, structures and teaching methods;
4. redefining and developing the role of the Region as regards:
   a) links between the various training systems within Regions;
   b) mass computer literacy;
   c) analysis and reform of centres of training;
   d) retraining of trainers and regional managers;
   e) the creation of a continuing training system.

ISFOL's programme of activities for 1986 aims to continue with initiatives already underway, using comparable methods consistent with emerging requirements.

As regards consolidated and continuing activities and the priority areas highlighted by the four 1985 projects, areas of action for 1986 are:

1. the reform of the training and guidance system and the role of the Regions;
2. new training models;
3. evolution of the production apparatus and job skills;

4. job creation.

The following will be outlined below:

a) consolidated and continuing activities

b) areas of action for 1986, outlining priority objectives in each area, any links with 1985 projects and new proposals to be submitted to the Board of Management.

a) Continuing and long-term activities

a.1 Continuing activities

Development of work/training contracts in 1986: Results in terms of jobs and training opportunities for young people. As in previous years (the first survey dates back to 1983) this survey will provide new analytical information on both the job dynamics and effective training experience provided by work/training contracts.

The EVA (integration into working life) survey: The aim of this annual survey is to provide information on the numbers of young people making the transition between school and work and the ways in which they make this transition, and the training and career paths followed by young people both within and outside of the labour market in order to provide information which may be used as a basis for training and employment policies.

The survey of vacancies for qualified labour in Italy in the private sector which ISFOL has been conducting for some years provides information on trends in job vacancies, analyses of the type of staff required and

information on the terms of the employment offered.

Job bands project: This project complies with Ministerial Directives on bands of jobs and provides the technical assistance required by Art. 18 of Law 845/78.

Project work includes the national coordination of experiments and the technical and methodological apparatus required to bring the projects to fruition. It is planned to set up a working party of experts to assist with this project and also to continue research into the relationships between new technology and jobs. The Job Bands Project is linked to the research launched in 1985 on trends in European job and qualification classification systems and also looks at information science.

Documentation and provision of information connected with the publication of ISFOL anthologies, the journal, the library and newspaper and periodicals library. There are plans to set up an archive of the vocational training system and vocational training policies.

The activities of the software library of the Albano Experimental Centre involving the classification and listing of teaching materials in cooperation with the Regions as well as the acquisition of new materials and their dissemination.

a.2 Long-term activities

Long-term activities, as mentioned above, are those which enable the organised monitoring of developments by "monitoring units".

Many of the activities launched by ISFOL in this area

and listed in previous years as consolidated activities, will during the coming year make a contribution to the planning of specific areas of action (for example the unit which monitors what training is available; the distribution and features of vocational training centres; regional legislation on public and private vocational training staff; vocational training in the agricultural sector; vocational training costs, funding and expenditure; the map of ESF regional projects and the analysis of ESF grants awarded in 1985; the monitoring unit for regional training and employment policies for young people).

Long-term consolidated activities will continue to include:

- the assistance provided by ISFOL to the establishment of the "Réseau des projets de démonstration" set up by the EEC which has made ISFOL responsible for the part of this project relating to regional and local human resource management within advanced labour policies in the light of new technology;
- the monitoring unit for contracted out vocational training for an analysis of trends in contractual activities in the area of vocational training for employed adults;
- analysis of changes in the working methods of working women.

b) Areas of action

b.1 Reform of the training and guidance system and the role of the Regions

Far-reaching changes in the vocational training system now seem unavoidable, bearing in mind that Law 845/78 to a large extent reflects the particular climate of the time at which it was prepared and passed, to deal with new and urgent social requirements. In addition to the problem of legislative instruments and related agreements (for example the Declaration of Intent between the Minister of Labour and the Regions of 18 May 1983 which has never been implemented) which will require further reflection to work out new methods of revision, ISFOL's role for 1986, and not only for 1986, is to gear the research and technical assistance which it undertakes to the planning and definition of a new scenario for the entire vocational training system taking account of the links between the regional training system, the educational system and labour market outlets for the products of the regional system.

A significant contribution to the reform of the system will depend on the creation of appropriate monitoring and analysis instruments and the launch of new experiments.

A feasibility study for a monitoring unit on the training offered by the public and private sectors, firms, ministries and in particular the services sector will be analysed for this purpose, consulting the interested parties and taking account of foreign experience, and the analysis of the features and composition of vocational

training centres will be used to provide improved information.

Other monitoring and analysis methods which ISFOL has consolidated over the years in the areas of both legislation and training costs, funding and expenditure, with particular reference to ESF grants, will be geared towards the achievement of the priority objective, i.e. the regeneration of the vocational training system.

Specific technical assistance requested by the Regions and in some cases "owed" by ISFOL (particularly in the Southern regions) will be used to provide better information on the role of the Regions and to test new models. ISFOL has already set up working groups with regional coordinators and officials.

This area of action includes, in addition to these long-term activities, the research approved by the Board of Management as part of Project 4 of 1985.

Particular emphasis will be given in this area to the training of training operators, i.e.:

- trainers,
- officials of regional offices,
- non-teaching staff of vocational training centres,

since the training of trainers alone, although an absolute necessity, cannot be a prime mover of change without trained officials and staff.

The training centre will also be studied as a complex structure which not only provides training, but also information and its links with the training system and the employment problems of its area will be examined.

Together with the problem of training and the role of

the Regions, an in-depth study of the problem of guidance is also planned. ISFOL has for some years been providing help with the choice of guidance structures by research, assistance with the preparation of outline legislation, the organisation of regional and national structures, training of staff working in the area of guidance and relationships between school and vocational guidance.

During 1986, work will be continued on the preparation of the third report on guidance activities in Italy set in motion by the Ministry of Education which led during 1985 to cooperation between the Regions and the Ministry of Labour.

ISFOL will also initiate and support all types of scheme to make people more aware of guidance, such as the Guidance Week proposed by the Ministers of Labour and Education which may provide a good opportunity to compare and get to know the problems raised by guidance.

b.2 New training models

New training models geared specifically to particular objectives and the context in which training is given must be planned if the diversification of training activities aimed at young people (basic education, postgraduate diplomas, work/training contracts, apprenticeship. etc.), the new continuing training requirements and the launch of the new job creation schemes (cultural heritage, De Vito law, 40,000 work/training contracts, employment by the public authorities) discussed above are to have successful results. Attention will be focused on models and training

back-up in the areas of apprenticeship and work/training contracts.

These problems are linked to the need, real and not academic, for appropriate and effective use of the new technology within training schemes to bring the training on offer into line with the jobs available.

As regards this latter point, some of the plans discussed above require computer literacy schemes and the definition of new job profiles and training models.

The findings of Project 3/84, and the experience which the Albano Centre has consolidated over the years in the areas of computer literacy and the use of new teaching technologies, may point the way to the achievement of the objectives set out above. Assessment of training is as important in this area as it is in the area of the reform of the vocational training system, and is often neglected in the context of training activities in Italy, despite its close connection with method innovation. Any assessment of training must include both assessment of the training scheme or plan as a whole and assessment of the effectiveness of training schemes and certification procedures, in line with the request to ISFOL from the Regional Coordination of Local Government Officials.

### b.3 Evolution of the production apparatus and job skills

Closely linked to the above areas and connected to Project 2/85, ISFOL's objective is to analyse from its activities in this area what effects changes taking place in the production apparatus are having on training,

particularly as regards small and medium-sized firms, changes in job contents and above all professional mobility.

In addition to activities carried out as part of Project 2/85, certain of the consolidated activities discussed above, particularly the research to be conducted for the EC on regional and local human resource management within advanced labour policies in the light of technological innovation, will provide a good opportunity for an in-depth study of changes in work organization and job skills. This study of changing job contents will obviously make a significant contribution to the Job Bands Project.

b.4 Job creation

Following on from Project 1/85, ISFOL's aim is to provide back-up for the ten-year plan and other schemes to reduce unemployment, looking in particular at ways of developing the spirit of enterprise and the training needs which this entails. In this case as well previous ISFOL activities have made it possible to monitor developments and plan schemes for the creation of new businesses, including cooperatives and craft industries, pinpointing obstacles which must be overcome in the area of training back-up and technical assistance.

The lack of this back-up often invalidates national and, in particular, regional job creation initiatives.

Regional legislative measures designed to stimulate the spirit of enterprise, cooperation and training schemes

linked to specific jobs will be monitored and analysed and the findings used to plan and possibly test effective training back-up and technical assistance in this area.

**Working methods**

Priority will be given to the institution of ad hoc working parties both for continuing and long-term activities and for the four areas listed above, since these provide the most efficient way of combining specialist experience and representatives from the various institutions involved.

Once set up, these working parties will be asked to work to precise objectives within predetermined time schedules, since it is very important, particularly in areas given priority status, for these working parties to provide recommendations over short periods of time if they are to offer a real service to ISFOL. This is true for example as regards reforms of the vocational training system where the urgency of the problems to be solved may require prompt action.

Wherever necessary, work will be undertaken jointly with research agencies outside of ISFOL particularly for field investigations with interviews and several agencies will be consulted in each case to find out which offers the best facilities in terms of cultural abilities, organisation and specific competences for joint work with ISFOL.

# PROMOTION OF CO-OPERATION AMONGST RESEARCH AND DEVELOPMENT ORGANISATIONS IN THE FIELD OF VOCATIONAL TRAINING

WORKING MEETING
11-12 SEPT 1986

## SUMMARY PROGRESS REPORT ON THE TRAINING RESEARCH PROGRAMMES IN GREECE

MINISTRY OF NATIONAL EDUCATION AND RELIGION
ATHENS

CEDEFOP
BERLIN
1986

MINISTRY OF NATIONAL EDUCATION
AND RELIGION
TECHNOLOGICAL TRAINING INSTITUTE (ITE)
LEOF. SYNGROU 56 - Athens
Tel: 9216603

Athens, 30th May 1986.

SUMMARY PROGRESS REPORT
RESEARCH PROGRAMMES

1.General

As previously mentioned in the Technological Training Institute's (ITE) summary report of the 10th May 1985 regarding its operations programme for the year 1985-1986, the ITE is currently in its recruiting stage. In spite of this, it has undertaken to develop and supervise research, surveys, training seminars and further education programmes.

Included in the above ITE activities are:

a) The experimental programmes
   - SEP, which provides further training in career counselling to to Secondary Level teaching personnel.
   - AGRO, which provides training for Lykeion graduates in subjects relating to the operation and management of Agricultural Cooperatives.
   - LINK, which provides liaison between the Integrated Comprehensive Lykeion and the Community (environment).

b) A study of educational programming and development in the West Attika area.

c) Research into the possibilities for introducing innovation into Small-and Medium-Sized Businesses.

d) Various research programmes of the TEI, financed in part by the European Community.

Finally, as has been previously mentioned, the Technological Training Institute has the following additional responsibilities in keeping with Law No. 1404/83 and the Presidential Decree which dictates its activity:

- Conferring of equal-with-University status on Tertiary-Level non-University degrees.
- Draft programme outlines plus detailed timetables of new subjects for the Technological Training Institutes, and counselling on the above draft outlines and programmes on possible proposals for improvement of current TEI programmes.

2. The Experiemtal Programmes.

The following have been implemented:

- SEP; widespread dissemination of information,collated in response to job demand in various parts of the country, to teachers of General and Technical Vocational Training who have participated in the four stages of post-training at the Athens Technological Training Institute. In addition, the above teachers were sent a series of leaflets and reports on experimental programme developments. The plan is to continue to furnish information about the job market and of developments within the framework of the experimental programme to participating teachers.
- AGRO; four one-day seminars (in Kavala, Patras, Larissa and Irakleion) split into categories were carried out, in order to train Lykeion graduates as personnel for Agricultural Cooperatives. Employees from those Agricultural Cooperatives in which the Lykeion trainees are to work took part in the seminars, as well as diverse other representatives from developing organisations, local government and manufacturing units, according to each regional circumstance. The proposals and the subsequent discussion at the Kavala seminar have

already been printed in a pamphlet which has been sent to all the participants but also to a wider audience.

- LINK; notification of information and results collected about the programme two (2) seminars for Secondary Education teachers who will be teaching at Integrated Comprehensive Lykeions. The results of this programme will continue to be presented at the annual training seminars for teachers who will be teaching at Integrated Comprehensive Lykeions.

  Publication of a volume containing information and prospects relating to the above three experimental programmes is being planned. Work on this volume is currently in its final stage and will be in circulation by next July.

3. Survey of Educational Programming and Development in the West Attika Area.

After the Ministry's decision of E5/7628/15-11-1984, a team of teachers from the TEI (Technological Training Institutes), the AEI (Higher Educational Institutes) and the KETE (Technical and Vocational Training Centres), were brought together for the following purpose:

- To draw up a programme for research into the job market and to formulate alternative future senarios along with a proposal for experimental programme schedules for the West Attika area.
- To put a further education seminar into operation to train further education teachers and others to take on the task of amplifying the distribution of the survey results, and of implementing them in schools and factories.

  The organiser of the survey in the administrative sense is the Athens Technological Training Institute, while the Institute of Technological Training is responsible for the scientific guidance and supervision.

Apart from the above two specific objectives laid out in the before-mentioned Ministerial decision, the survey on educational programming and development in West Attika also has a series of other objectives which form part of a pilot survey for the purpose of gathering experience and defining the methodology which will permit a repeat survey on a larger scale.

More specifically, these objectives are:

- The liaison of the Athens Technological Training Institute with the manufacturing units in its area in order to facilitate collaboration between them.
- To familiarise teachers and students at the Athens, Piraeus and other TEI institutes with the mechanics of surveys on educational programming and planning, and collaboration between them as well as with teachers of other Schools and Institutions.
- Research into the Secondary manufacturing sector mainly from the point of view of introducing new technology and information on improving productivity in manufacturing units, at least small- and medium-sized ones, in relation to Technological and Work factors in the survey area (West Attika).

According to the survey's work schedule, the first phase (A) included:

- A defined action plan of the best possible approach to the general methodology which will achieve the survey objectives.
- The collection, analysis, comment on and listing of the secondary objectives ie those elements collected by organisations other than the survey team (always related to the West Attika area) and
- A first approach at the formulation of the mathematical model which will facilitate the prediction of the demand for various courses in Secondary and Tertiary Technical and Vocational Training in the survey area in coordination with the manufacturing product.

The first phase (A) of the survey was completed in May 1985 and the material collected, along with everything investigated at this stage, was included in a volume published by the OEDB, the Educational Books Publication Organisation, and which was circulated to all interested parties.

This phase of the survey was followed by a second (B), which included:

- The formulation of the methodology for the prediction of the alternative future senarios and proposals for four (4) such senarios for the West Attika area.
- Programme of work for a census of businesses in the survey area, based on a representative sample, which was necessary in order to gain a precise picture of the manufacturing product in the survey area and the trends which show promise of future growth.
- The procedure for collecting and working on primary data ie. data which came out of the businesses census in the survey area
- What form improvements of the mathematical model will take which will be used to predict the future demand for skills and
- The collection and analysis of supplementary data relating to demographic and socio-economic characteristics of the survey area.

Upon completion of the second phase (B) on the 31-12-1985 ie. the finalising phase of the methodology, the collection and documentation of the data, the establishment of an archive and the formulation of the improved mathematical model, the refinement and analysis stages were completed, and from the beginning of the year the survey is now in its third phase (C) which is the phase of synthesis and presentation of results.

The third phase (C) of the survey is expected to be completed in July 1986 and will include the alternative future senarios (text and tables) and of course, the future demand, broken down by type and by number,

for various secondary and tertiary technical and vocational training courses in the survey area.

4. Survey to Investigate the Possibilities for Introducing Innovation into Small- and Medium-Sized Businesses.

This survey, which had been scheduled for 1986, has been postponed to 1987 due to budgetary planning. The preparatory work has already been begun however, specifically, contacts with the BEA (Athens Mnaufacturing Chamber of Commerce) and the EOMEH (National Organisation of Greek Handicrafts) have been initiated, with the aim of gethering data for the selection of businesses which will participate in the programme.

5. The Various TEI Research Programmes Which are Being Partly Financed by the European Community.

Due to the only partial staffing of the Technological Training Institute, an exceptional supervisory council of the various TEI research programmes has been convened. This council will be ratified through a Ministerial decision. The council members consist of two (2) ITE Consultants, one (1) Athens TEI Professor, one (1) Piraeus TEI Professor and one (1) Patras TEI Professor.

A list of all the research programmes including those partly financed by the European Community have been referred to the council for judgement on their progress to date.

6. Other ITE Activities.

No activity regarding the conferring of equal status for non-University Tertiary level degrees has been noted in the period preceding this report, nor, similarly, regarding work on programme outlines or on detailed progamme schedules or timetables.

But since the above activities are judged absolutely necessary to the smooth operation of the TEI and are also of wider significance, six Consultant positions have already been created six weeks ago at the Technological Training Institute. Employment will be at the level of TEI Professors who will undertake the manning of the Equal Qualifications Department and the Programme Department of the Institute.

In rounding up this report, we would like to inform you that in the September 1986 meeting we will furnish you with our latest publications which will relate to:

-The Experimental Programmes and
-The West Attika Educational Programming Survey.

Coordinator of National Policy

Prof. Dr. M.T. Papatheodossiou
ITE Consultant.

PROMOTION OF COOPERATION AMONGST
RESEARCH AND DEVELOPMENT ORGANISATIONS
IN THE FIELD OF VOCATIONAL TRAINING

WORKING MEETING
11-12 SEPT 1986

# RESEARCH METHODS FOR THE INVESTIGATION OF PROBLEMS IN THE LINKAGE WITH THE LABOUR MARKET IN THE NETHERLANDS

UNIVERSITY OF UTRECHT AND PCBB

CEDEFOP
BERLIN
1986

# DEVELOPMENTS IN METHODS FOR THE INVESTIGATION OF PROBLEMS IN THE RELATION BETWEEN EDUCATION AND THE LABOUR MARKET

## Introduction

This paper draws attention to two important developments in the relation between education and the labour market. The first one consists in the development of methods of investigation to determine occupational profiles and training profiles. The second manifests itself in a rearrangement of the decision-making structure concerned with establishing the form and content of courses in vocational education.

Three phases can be distinguished in the methods used to attenuate the problems of linkage between education and work:

Phase 1. This phase consists in the analysis of occupations and in the determination of occupational profiles and training profiles.

Phase 2. This consists in the programming of teaching, curriculum development and renewal, software and hardware procurement, retraining for instructors.

Phase 3 consists in the conduct of research into the functioning of persons on the labour market and in the work process. The aim of this is to

provide feedback to the education system and to determine the requirements for training and retraining in the undertaking.

Two investigative approaches are indicated below which take effect in phase 1 and two which take effect in phase 3.

## 1. Outline project

The development and application of an instrument for occupational analysis by Dutch Industry's Pedagogic Centre for Vocational Training (PCBB).

### 1.1 The instrument

From the end of 1975 on, problems related to the coordination of vocational training with vocational practice became a subject of increasing discussion in circles of the national training institutions concerned with the apprenticeship system. A major reason for this lay in the limitations which were becoming increasingly apparent in the way in which programmes were devised for the apprenticeship system (resulting in so-called "total programmes" at national level). The speed and extent of new developments in vocational practice, in both the technological and the social fields, also made it necessary for the national training institutions to look

round for other modes of approach. Generally speaking, the methods used up to then were found to offer too little scope for focussing on occupational practice and developments in it in an objective manner.

In 1979 a project was launched with the aim of developing an instrument by which a training institute could gear its training provision, in both structure and content, to developments in occupational practice. The project was known as the "Mantelproject" (Outline Project). The development work went according to plan. In 1983 it was possible to offer the apprenticeship system an instrument for occupational analysis in the form of a manual. From 1983 on, the members of the project team began transferring the instrument to interested national bodies concerned with the apprenticeship system and conducting occupational analyses commissioned by outside interests. Work is still proceeding on improvements to the method, on experimentation with other methods of analysis and on the development of instruments for future research in the field of vocational training. The team is also endeavouring to expand its services on behalf of those involved in occupational analyses and those having an interest in them.

The instrument, which was developed and tested in the period 1979-83, comprises two phases which will be described briefly below.

In the first phase the aim is, in consultation with

representatives of the client, to define as clearly as possible what the information requirement is and what problem underlies it. On this basis a question of inquiry is formulated. If the members of the project team are of the opinion that they cannot answer this question, that fact is declared. If others are able to answer the question posed more effectively, the applicants are referred to the appropriate quarter.

If the project team conclude that they are able to deal with the question posed, the investigative process is worked out in terms of content and organisation.

The first step in the investigative process is to mark out the occupational group or sector which is to be investigated. Indeed the first measurement takes place among persons who work in the field of occupational practice to be investigated.

The activities performed by those involved in the field of occupational practice in question and the importance of those activities to the performance of their function are determined. This is done with the aid of a list of activities, drawn up for the investigation, which defines all work-related activities arising in the occupational practice marked out. They may be technical activities, but they may also be administrative or communicative activities. Statistical techniques are used to determine to what extent the functions investigated can be concentrated into a number of occupational profiles.

The field of occupational practice is analysed into a structure which reflects differences in practical job performance. Certain specialisations thus enter the picture. In addition, research into future developments in the occupational sector concerned conveys an appreciation of developments to be expected in the short or medium term.

The results of the research are presented to the client. The latter has at his disposal a developed survey of the sector in the form of occupational profiles. With the aid of these results the client can (in consultation with management and the employees' representatives) take a decision on a review of the existing training provision.

For this purpose, first the occupational profiles must be drawn up and then the structure of the training provision, which is also geared to the needs of other occupational profiles, must be worked out. Once the decision has been taken as to what further courses need to be developed, stage two of the Outline Project comes into operation. The development teams of a national body, for example, and of the Outline Project have a detailed list of activities drawn from the occupational profiles. If those who have to develop the course or courses further only have a limited knowledge of the occupational practice (for example, where far-reaching changes are taking place in it), a decision may be taken to carry out an "enrichment study".

In this enrichment study information is systematically collected from those engaged in the occupation, for each activity or group of activities, on the standards with which the activity or the product of the activity or activities must comply, the aids used in the performance of the activity or activities and the circumstances in which the activity or activities is or are performed.

With the aid of a step procedure developed by the Outline Project, information from the studies carried out (the analysis of present and future occupational practice and the enrichment study) can be developed into a national training programme.

## 1.2 Application

In the second stage (1983-87) so far, the Outline Project has carried out occupational analyses in cooperation with training foundations and centres for the following trades and groups of workers:

- the economic and administrative occupations (Stichting vooropleidingen in Economische en Administratieve beroepen);
- opticians (Stichting Nederlandse Vakopleiding Opticiens);
- hairdressers (Stichting Vakopleiding Kappers);
- metal workers (Stichting Opleiding Metaal);
- carbody workers (Stichting Vorming en Opleiding Carosseriebedrijf);

- bakery workers (Vereniging ter Bevordering van Opleiding in het Bakkersbedrijf);
- confectionery workers (Stichting Vorming en Opleiding Banketbakkersbedrijf);
- care and service occupations (Stichting Opleiding Verzorgende en Dienstverlenende Beroepen);
- retail trade (Stichting Opleiding en Vorming Detailhandel);
- painting and decorating (Stichting Vakopleiding Schilders);
- graphic arts (Het Grafisch Opleidingscentrum).

In addition a start will very soon be made on occupational analyses with BETEX, the national body for the textile industry, Stichting Leerlingwezen voor de Land- en Tuinbouw (training foundation for farming and horticulture), Stichting Opleiding Gawalo (training foundation for the plumbing and installation trades) and Stichting Opleiding Klimaatbeheersing (training foundation for the air conditioning industry).

Even outside the apprenticeship system there is interest in the occupational analysis method. Bodies responsible not only for training financed or provided by the Ministry for Agriculture and Fisheries and the Ministry for Home Affairs but also for courses in higher vocational education have expressed an interest.

## 2. The Frey conference model

In order to determine the basic skills forming part of the training profiles for the clerical practice sector of the lower domestic and technical education (LHNO) system and for studies in the mechanical engineering field of intermediate technical education (MTO), Nijhof et al. of the Technische Hogeschool Twente made use of Frey's "curriculum conference" model (K. Frey, 1982, Curriculum-conference: an approach for curriculum development in groups. Kiel, Institute for Science Education, FRG). A major reason for the choice of this model was the short time in which the training objectives considered important for a given course have to be determined.

## 3. Research geared to spearhead firms

The Committee on Business Development Problems of the Social and Economic Council (Commissie Ontwikkelingsproblematiek van Bedrijven van de Sociaal-Economische Raad - COB/SER) commissioned a study from the firm of organisation consultants Bakkenkist, Spits en Co to be carried out through interviews, questionnaires and observations at spearhead firms, in order to determine what demands were being imposed on school-leavers in the field of new technologies and to investigate what advanced applications were to be found. "Spearhead firms" are firms with a high degree of computerisation and considered to be front-runners in their own branches of

industry. This study was carried out for the sectors of office automation, industry and health care.

## 4. School-leavers study

The Department of Educational Studies of the University of Utrecht is conducting a study, at the request of the Ministries for Education and Science and Economic Affairs, on the discrepancies experienced by pupils of the intermediate technical schools (MTO) between their school training and education and their performance in the work situation. This includes an investigation of the extent to which the school-leavers come into contact with automation and computerisation and the manner in which deficiencies in their training are made good. The investigation also covers the extent to which demands are imposed by the job which call for a different training structure. For example, do mechanical engineering apprentices need to know so much about electrical engineering that the two courses should be merged?

## 5. Deciding on the organisation and content of vocational training courses

Linkage problems in the relation between education and the labour market have led to the development of methods by which information can be provided rapidly and comprehensively to aid the structuring of training

courses.

A distinction is made in the use of these methods between measurement and decision. Developments in occupational practice can be measured with the aid of an instrument. The decision on the adaptation of the training provision to the measurement results remains a decision-making process in which a number of interests have to be weighed against one another. Interests at the level of the trainee (broad-narrow training), of the employer (direct employability) or of the trainer (number of hours devoted to a given field).

The question is: who has to be formally involved in that decision-making process? At the time when this question became topical, discussion was also getting underway on the involvement of the employers' and employees' organisations in the consultative process on vocational education. Recommendations on this subject from a committee (the Wagner Committee) set up by the Government led to the launching of a process of "Open Discussion" in which the two sides of industry took part alongside the representatives of the educational organisations. The Cabinet agreed with the Open Discussion in that the joint reponsibility of industry, education and Government implied a consultation structure in which the organisations of industry should be fully involved, right through to the final stage, in the discussion on vocational education. This means that industry should have a permanent role of co-reponsibility from the

outset, notably in the following areas:
- the development of occupational profiles,
- the development of vocational training profiles, curricula and examination programmes,
- the development of regulatory measures,
- procedures for examination,
- the planning of facilities,
- equipment,
- job experience assignments.

That was in 1984. The Ministry for Education and Science worked out some of the agreements in a consultation document from State Secretary for Education and Science Ginaar-Maas on the development of occupational profiles and curricula for vocational education, which was presented to the Second Chamber. The consultation document is mainly concerned with the first two fields mentioned. It deals in detail with the sharing of tasks between education and industry in the determination of occupational profiles and (national) curricula. In particular it proposes that the determination of occupational profiles (see the first phase of the Outline Project instrument) be assigned to the area of decisions taken by the employers' and employees' representatives. The determination of training structure and content falls within the reponsibility of the two sides of industry and the education system. In the meantime the consultation process, in which the system of co-reponsibility has to be mapped out, between the two sides of industry and the education system is taking shape in a number of business

sectors.

A sector which is reasonably well advanced in this respect is that of the "technical industries". The following criteria have been established for the system of Industry Consultation on Technical Education (Branche Overleg Technisch Onderwijs - BOTO) (a key to the abbreviations used is given in an Annex).

1) The system of consultation is organised according to branches or subsectors of the technical industries sector.

2) Joint consultation by all industries in the field of technical education is organised according to a "streamlined structure" in the system of Sector Consultation on Technical Education (Sector Overleg Technisch Onderwijs - SOTO).

3) The BOTO consultation machinery was initially geared to full-time vocational education in the first and second phases of continued education - LTO, KM(B)TO/MTO - (higher education has its own consultation structure; that does not mean that there will be no contacts with the higher technical education system (HTS-TH) in the field of of technological developments!). The apprenticeship system (leerlingenwezen - LLW) and vocational orientation education (beroepsbegeleidend onderwijs - BBO) are initially assigned to a separate position in

> the consultation procedure, because of the differences between full-time and part-time education. This applies both to existing policy-making and consultation structures, and the involvement in them of the employers' and employees' representatives, and to the organisation of the two forms of education.

The education consultation system at sectoral level according to the BOTO/SOTO model is based on the most viable structure in technical education. The model is a growth model and is intended eventually to form the discussion forum for each industry or subsector on both full-time and part-time education.

It would moreover be possible for this growth process to take place differently for each industry. It might even be possible for consultation to be launched in one particular BOTO scheme geared to both full-time and part-time education. The joint consultation process in the SOTO context, however, has from the start been geared to both part-time and full-time education.

The criterion envisaged in promoting the integration of discussions on full-time and part-time education within each BOTO scheme is that the scheme must have joined together with the relevant national body within three years from the start of the BOTO scheme concerned.

After the first and second year the preparations for

integration must be tested against the possibility of satisfying the criterion and must be adjusted where necessary.

4) The parties to the discussion are representatives of the employees' and employers' organisations concerned at industry or subsector level and relevant organisations within the education system concerned, in this case the Association of Intermediate Technical Colleges (VMTS). Ways are also being sought to involve the LTO system and the KMBO technical courses in the consultation process.

5) The Ministries for Education and Science, Economic Affairs and Social Affairs appoint a discussion partner for BOTO and SOTO respectively.

6) The Ministries for Education and Science, Economic Affairs and Social Affairs each appoint observers to attend BOTO and SOTO meetings, respectively.

7) The stage is set for the decentralisation of the educational consultation process. Denominational education organisations and their tributary organisations are not represented in the sectoral discussion because they participate in the Central Committee for Consultation on Education (CCOO) and the Consultative Body for Continued Education (OOVO) at national level. The central employees' and employers' organisations are also not represented in

the sectoral consultations because they also participate in OOVO (CCOO).

BOTO schemes are being set up in seven subsectors of the technical industries:

1) Metal industry, Metal processing firms and Metal trade;
2) Electrotechnical industry and electrotechnical installation contractors;
3) Construction;
4) Civil engineering;
5) Process industry;
6) Automotive and farm mechanisation firms;
7) Plumbing and ventilation contractors (gas, water, ventilation and air conditioning).

## 6. Research policy

There are a number of agencies in the Netherlands which concern themselves with policy on research into vocational education and the relation between education and the labour market. In the first instance there are the Ministries for Education and Science, Economic Affairs and Social Affairs. There are interdepartmental working parties and project groups concerned with this field. The Information Technology Stimulation Plan (Informatica Stimuleringsplan - INSP) is aimed at giving direction to activities in the field of computerisation and automation in education.

Secondly there is the Foundation for Educational Research (SVO) which has initiated a "proposal for a research programme into problems connected with education and the labour market" and which finances research in this area.

Thirdly there is the Organisation for Strategic Labour Market Research (OSA), which is responsible for research in the field of of the labour market.

The organisations which carry out this research are, in part, the universities, but a large number of other organisations are also involved.

ANNEX I

KEY TO THE ABBREVIATIONS USED

LTO = Lager Technisch Onderwijs (Lower Technical Education).

LHNO = Lager Huishoud- en NijverheidsOnderwijs (Lower Domestic and Business Studies Education).

KM(B)TO = Kort Middelbaar (Beroeps) Technisch Onderwijs (Short Intermediate [Vocational] Technical Education).

MTO = Middelbaar Technisch Onderwijs (Intermediate Technical Education).

HTS = Hoger Technisch Onderwijs (Higher Technical Education).

TH = Technisch School (Technical College).

LLW = Leerlingwezen (Apprenticeship System).

BBO = Beroepsbegeleidend Onderwijs (Vocational Orientation Education).

CCOO = Centrale Commissie voor Onderwijs Overleg (Central Committee for Consultation on Education).

OOVO = Overlegorgaan Voortgezet Onderwijs (Consultative Body for Continued Education).

PCBB = Pedagogisch Centrum Beroepsonderwijs Bedrijfsleven (Dutch Industry Pedagogic Centre for Vocational Training).

SVO = Stichting voor Onderzoek van het Onderwijs (Foundation for Educational Research).

PROMOTION OF CO-OPERATION

AMONGST VOCATIONAL TRAINING

RESEARCH AND DEVELOPMENT ORGANIZATIONS

WORKING GROUP
11-12 SEPTEMBER 1986

# VOCATIONAL TRAINING IN SPAIN

- Enrique Retuerto de la Torre -

CEDEFOP
BERLIN
1986

SPAIN

Vocational Training

Short programmed course of modular training based on a work analysis and oriented towards employment (administrative body: Ministry for Labour. National Institute for Employment).

Projects concerned with new technologies and new information technologies.

1. A general project involving modular training with special elements concerning automatic systems, regulation and control, communications, micro-electronics, information technology equipment, CAD and CAM, and office technology.

CEFAT: Spanish Centre for Training in Advanced Technologies
Created by the National Institute for Employment (INEM) and the National Institution for Optics.
Responsible for the vocational re-training of workers in the mechanical/metallurgical sector (March 1986), 16 pupils per class; 2 for each training place.
Various training courses, by specializations, with an average of 500 hours (6 months) for each one.

2. Various enterprise centres have and will be created within the framework of training provision, with the support of the Ministry for Labour and Social Security.
This Ministry employs INEM as a technical and administrative body, officially recognizes the centres, subsidizes training in full or in part and recognizes the training certificates granted.
Basically, the enterprise centres cover the following sectors: electronics, automation, communications ...

3. Mention should also be made of the universities, which, on the basis of agreements made with INEM, provide teachers, didactical aids and experimental equipment for certain courses in applied technology (these include the specialized disciplines of micro-electronics, aquiculture, business administration, etc.).

4. Information technologies in support of vocational training, comprising:

4.1 Selected integration of video systems as a teaching aid

4.2 Experimental computer-assisted training with an extensive application programme for owners and managers of small enterprises for the "application of information technology for the management of enterprises"

5. For the first half of 1987, the experimental projects indicated above will be intensified and a number of computer-assisted training programmes will be introduced (for example for employees in the financing sector, in collaboration with a private Foundation, for numerically controlled machine tools and for regulation and control circuits in general).

6. The possibility of employing television/teletexts and radio for distance training are also being studied.

Madrid, August 1986

Programme: Research and experimentation in vocational training

Principal projects in Spain

Institutions involved:
Ministry of Labour and Social Security, National Institute of Employment (INEM)
Ministry of Education and Science, Institute of Educational Technology (ITE)
FUNDESCO (Foundation for the Development of the Social Function of Communications)
Complutense University, Madrid, Department of Biology
Zaragoza University, Transport Section
Polytechnic University of Madrid, School of Design and Artigas Institute

1.
Institution/project Ministry of Labour and Social Security, Study of the Demand for Labour Skills.
Purpose The regular and systematic study of industry's demand for skilled labour, using the Delphi Method. The project involves the government, employers' organizations and trade unions.
Stage The project is at the planning stage.

Institution/project National Institute of Employment, Spanish Centre for Advanced Technologies.
Purpose To meet training needs at intermediate technical levels in the areas of telecommunications, industrial automation, microprocessors, office automation and CAD/CAM,

by means of modular courses of short duration.
Stage The project is already in operation as part of the restructuring process in the shipping and domestic electrical sectors; it is in the process of being introduced as part of the job-related training programmes under the National Plan for Training and Employment.

Institution/project National Institute of Employment, Programmes of Computer-Aided Learning.
Purpose The extension of job-related training using self-instruction techniques.
Stage A programme is being introduced covering bookkeeping and value added tax aimed at the managers of small and medium-sized enterprises; studies are in progress with a view to introducing a programme of training in numerical control methods using computers.

Institution/project National Institute of Employment, Study of the Financial Sector.
Purpose The occupational structure of the financial sector and the development of occupations within it are being investigated in order to assist in the planning of vocational training and guidance.
Stage The project is currently under development.
NB In addition to these studies specifically related to the financial sector the National Institute of Employment is engaged in on-going research into work processes with a view to the development and up-dating of training programmes.

2.
Institution/project Ministry of Education and Science, Institute of Educational Technology; Athene Project.
Purpose The introduction of computers into primary and secondary schools.
Stage Trial projects are underway covering a variety of applications.

Institution/project Ministry of Education and Science, Institute of Educational Technology; Mercury Project.
Purpose The extension of the use of audiovisual materials and equipment among teachers.
Stage This on-going project has been in operation since 1984.

3.
Institution/project Polytechnic University of Madrid, National Institute of Employment, private firm; project linked to the COMETT programme.
Purpose The development of a modular approach to simulations concerned with numerical control, with computer support.
Stage The project is at the planning stage.

4.
Institution/project FUNDESCO; Information Technology and Job-Related Training.
Purpose Certain applications are being tested for incorporation into programmes of general education (Athene Project; see point 2); the research, with case studies,

is directed towards application in job-related training.
Stage The project is at the planning stage.

5.
Institution/project Complutense University, Madrid, Department of Biology; Sea Farming Research and Training Centre.
Purpose The training of higher- and intermediate-level technical staff and middle management in the processes involved in farming the sea.
Stage The project is at the planning stage.

6.
Institution/project Zaragoza University, Transport Section; Video Applications in Training.
Purpose The expansion of practical video applications in university-level training.
Stage The project was started in 1985.

7.
Institution/project Polytechnic University of Madrid, School of Design; Applied Design Training.
Purpose The incorporation into postgraduate courses of professional training in design (including CAD).
Stage The project was started in 1986.

PROMOTION OF CO-OPERATION
AMONGST VOCATIONAL TRAINING
RESEARCH AND DEVELOPMENT ORGANIZATIONS

WORKING GROUP
11-12 SEPTEMBER 1986

# DEVELOPMENT OF VOCATIONAL TRAINING IN SMALL AND MEDIUM CRAFT ENTERPRISES IN THE GRAND DUCHY OF LUXEMBOURG

CEDEFOP
BERLIN
1986

CHAMBER OF CRAFTS
Service for the Promotion of Craft Trades

# DEVELOPMENT OF VOCATIONAL TRAINING IN SMALL- AND MEDIUM-SIZED CRAFT ENTERPRISES IN THE GRAND DUCHY OF LUXEMBOURG

Report by the Luxembourg Committee for the Promotion of Craft Trades

The current economic and structural crisis underlines the economic and social importance of the presence of a sufficient number of dynamic enterprises in the small to medium-size bracket on the market.

The vocational training of future employers, executives and employees of enterprises, guaranteed by a suitable and constantly improved training system, is the prerequisite for the existence and development of small- and medium-sized enterprises.

In its efforts to adapt and reform the examination and certificate for master craftsmen ("brevet de maîtrise"), the Committee for Promotion has drawn on a series of basic considerations and concrete facts.

The trend towards larger craft enterprises goes hand in hand with the growing responsibility of the employer-craftsman towards his employees. In addition to purely

technical qualifications of a high standard, he must also have the necessary managerial know-how.

Greater freedom of establishment and, more particularly, increased competition from foreign enterprises which enter the relatively sharp Luxembourg market, quite clearly reveal the urgent need for our small- and medium-sized enterprises to attain as high a level of qualification as possible. This can be achieved by improving initial training and by providing further training courses on a permanent basis, most being organized by the various branches in the craft sector all year round (86/87 programme is enclosed).

The role of the apprenticeship master must be encouraged and his status improved. He must become more versed in pedagogical and educational skills.

The growth in the number of enterprises, the specialization in the activities of certain branches, and the diversification in the activities which master craftsmen have to assume in the craft sector, in other economic sectors and in the public sector, whether as an independent or salaried person, call for certain new orientations in the master craftsman examination.

After analysing the situation, the Committee for Promotion commissioned research which marked the first step towards preparatory work to draw up reform proposals outlining the

best way of meeting the current and future needs of small- and medium-sized craft enterprises.

For this purpose, some basic options have been defined:

1. To relax the conditions of admission to the master examination

(In particular by creating new openings for groups of people who have pursued different education and training paths or who have completed equivalent or superior vocational, technical or scientific courses of study).

2. To make further changes to the conditions of admission to the master examination by lowering the minimum age requirement, bearing in mind the level of qualification required for the different trades (minimum age at present 24 years).

3. To introduce more flexible regulations more in tune with the realities of economic life with regard to the length of practical vocational training (at present five years after obtaining the vocational training certificate - CAP).

4. To relax the examination requirements in the case of a master craftsman who switches from one craft trade to a similar one.

5. To examine the possibilities for introducing an examination system which would enable interested candidates to sit the master examination directly upon completion of two intermediate stages. These would be based on a well-defined training and examination programme. One of the stages would aim to equip the master craftsman with the skills needed to teach apprentices. The other would give him the skills he requires to head an enterprise. The preparatory courses for the master examination have been extended considerably since the implementation of the new examination system.

One other short-term objective of the Committee for Promotion of the Craft Sector has been the improvement and readjustment of theoretical courses for the training of young heads of small- and medium-sized enterprises. Experts on our staff have elaborated a new series of management courses in the following fields:

- business management,
- civil law,
- social security legislation,
- taxation,
- pedagogy,
- pricing.

These courses began in the autumn of 1986.

One other point which seems to us to be of particular importance was the new awareness of opportunities offered

to young people by new technologies and the means of equipping them with these new skills.

Several induction courses have been held and are to continue in the months to come in order to familiarize participants with personal computers, data banks, etc.

Another major success was the granting of approval for small- and medium-sized enterprises to work on public and private telecommunication networks. At the end of three years' research work, the Post and Telecommunications Authorities of the Grand Duchy of Luxembourg agreed, in accordance with the Ministerial Decree of 11 July 1986, to set up procedures with the Chamber of Crafts enabling craft firms and enterprises to install and maintain telecommunication equipment which is connected to the public network. This applied to the following fields:

- alarm transmission,
- telematics.
- telecommunications.

These new opportunities and orientations for enterprises in the weak current electrical field are a fine example of follow-up work in the field of "continuing" vocational training as they open the door to electronics and informatics.

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## PROMOTION DE CO-OPERATION ENTRE LES ORGANISMES DE RECHERCHE ET DE DEVELOPPEMENT EN FORMATION PROFESSIONNELLE

## FOERDERUNG DER ZUSAMMENARBEIT ZWISCHEN FORSCHUNGS- UND ENTWICKLUNGS EINRICHTUNGEN AUF DEM GEBIET DER BERUFSBILDUNG

11-12 SEPTEMBER 1986
CEDEFOP

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CEDEFOP — European Centre for the Development of Vocational Training

**Promotion of cooperation amongst research and development organizations in the field of vocational training**

**Working meeting papers — 11 and 12 September 1986**

*CEDEFOP Document*

Luxembourg: Office for Official Publications of the European Communities

1987 — 146 pp. — 21.0 × 29.7 cm

EN, FR

ISBN 92-825-7000-2

Catalogue number: HX-48-87-323-EN-C

Price (excluding VAT) in Luxembourg

ECU 5 BFR 200 IRL 3.60 UKL 3.50 USD 5

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Price (excluding VAT) in Luxembourg
ECU 5 BFR 200 IRL 3.60 UKL 3.50 USD 5

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